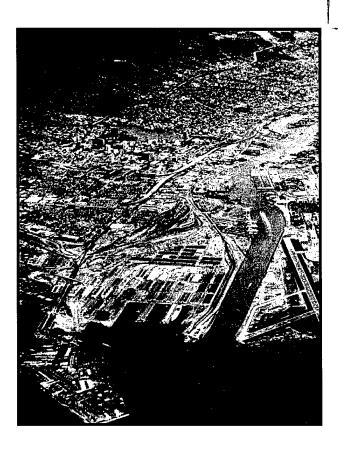
Disposal and Reuse of Fleet and Industrial Supply Center, Oakland Vision 2000 Maritime Development

Draft
Environmental Impact Statement/
Environmental Impact Report

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Volume II

March 1997

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FLEET AND INDUSTRIAL SUPPLY CENTER, OAKLAND and PORT OF OAKLAND, CALIFORNIA

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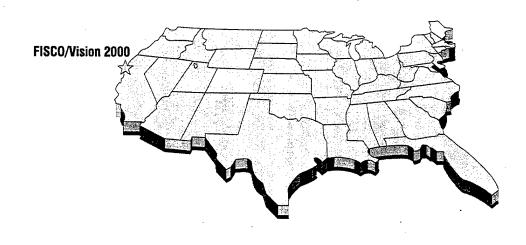
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APPENDIX A: Visual Resources on Site

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Older Transmission Line Structures in the Southern Pacific Yard Photo 5

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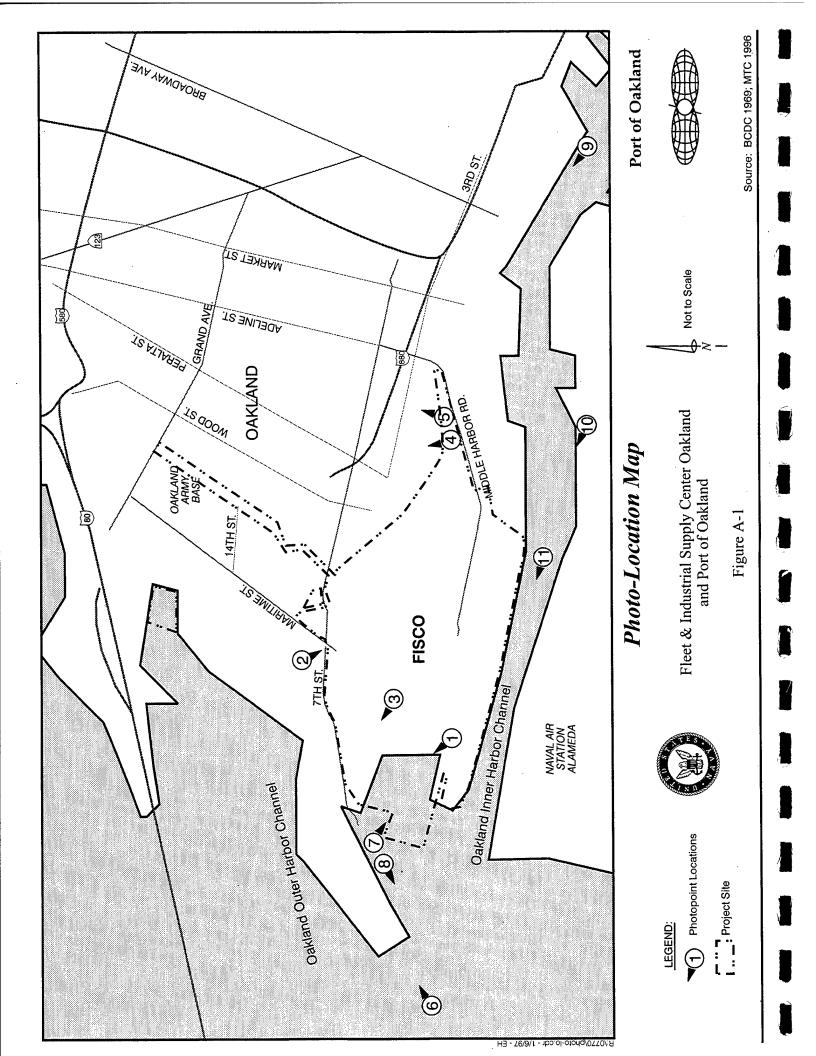
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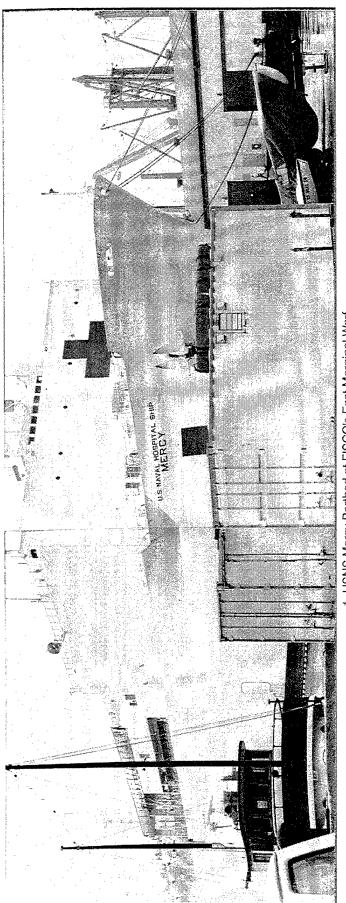
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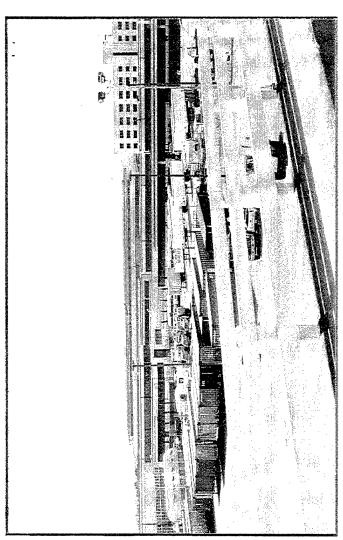
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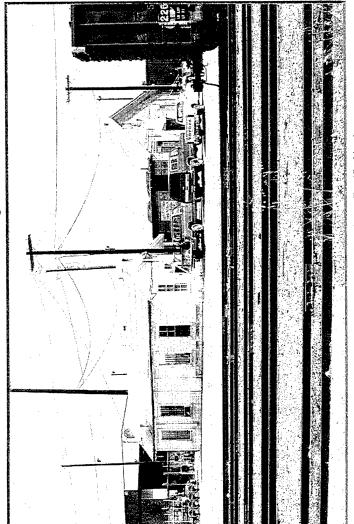
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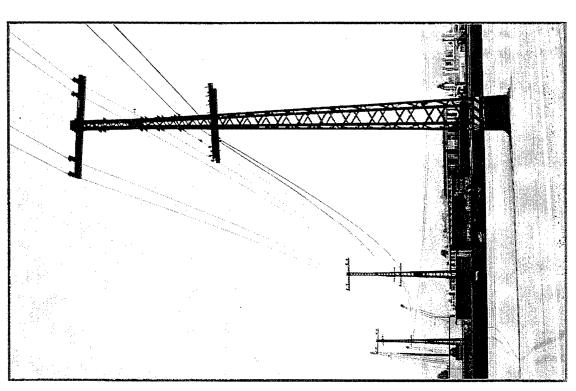
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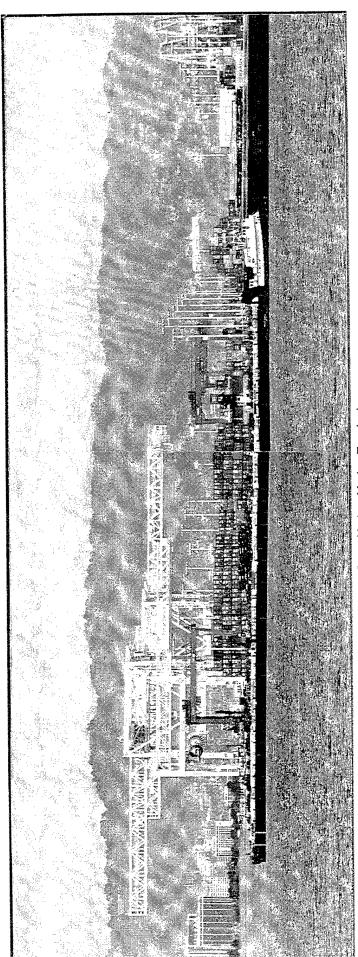
3. FISCO Officer's Housing Area



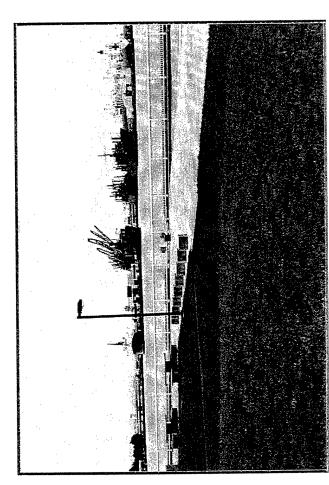
4. Older Buildings in the Southern Pacific Yard



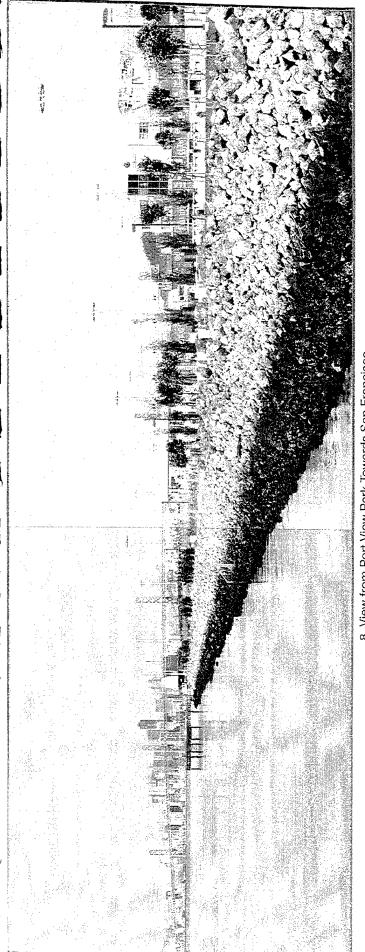
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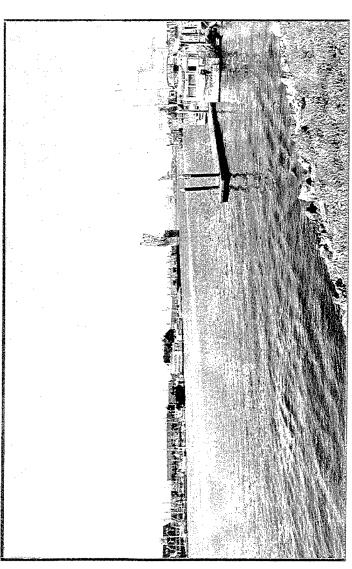
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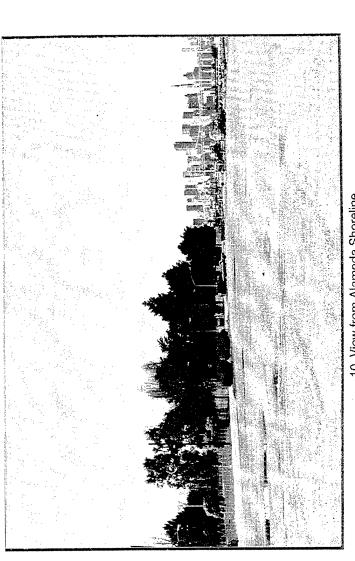
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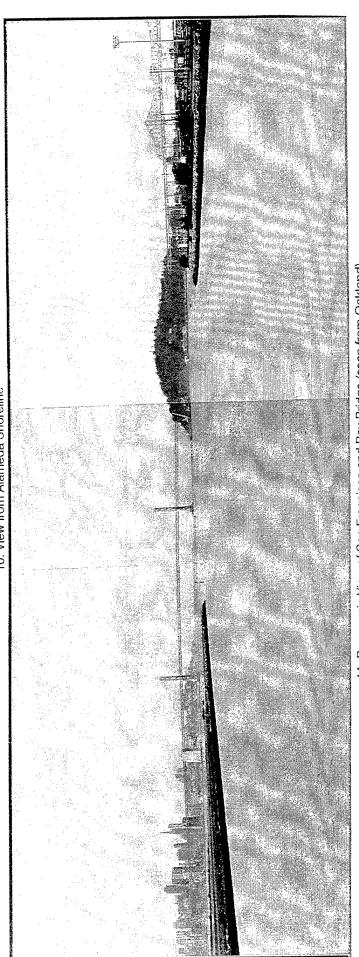
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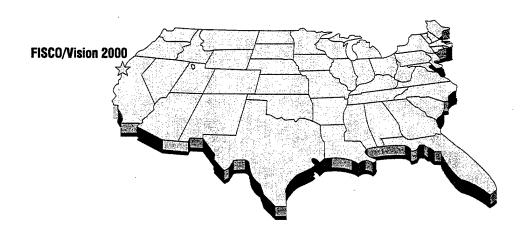
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Appendix B Special Legislation Relating to FISCO

B.1. DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION FINDINGS AND RECOMMENDATIONS

The Secretary of Defense, in compliance with Public Law 101-510, as amended, officially transmitted his recommendations for base closures and realignments to the Defense Base Closure and Realignment Commission on February 28, 1995. The Commission held 13 investigation hearings, conducted 206 fact-finding visits to 167 military installations and activities, held 16 regional hearings nationwide, listened to hundreds of Members of Congress, and received hundreds of thousands of letters from concerned citizens from across the country. By June 22, 1995, the Defense Base Closure and Realignment Commission had completed its review and analysis of the Secretary's recommendations, and began its final, two days of deliberations, all in public.

Information on the Commission's base closure and realignment decision for the Fleet and Industrial Supply Center, Oakland is presented below. The paragraph entitled "Secretary of Defense Recommendations" was taken verbatim from the *Department of Defense Base Closure and Realignment Report* dated March 1995. The paragraph entitled "Community Concerns" provide a brief summary of arguments presented to the Commission by local communities; they are not all-inclusive.

Fleet and Industrial Supply Center, Oakland, California

Category:

Fleet and Industrial Supply Centers

Mission:

Supply Support

One-time Cost:

\$23.0 million

Savings:

1996-2001: \$29.7 million

Annual:

\$12.6 million

Return on Investment:

1999 (Immediate)

FINAL ACTION:

Close

Secretary of Defense Recommendation

None. The Commission added this military installation to the list of bases to be considered by the Commission for closure or realignment as a proposed change to the list of recommendations submitted by the Secretary of Defense.

Community Concerns

FISC is located in three jurisdictions: Oakland, Alameda, and Richmond, California. Alameda and Richmond would like to have the land in their cities closed under base closure rules, which would expedite the land transfer. Initially, Oakland was concerned that any base closure action would prevent implementation of special legislation authorizing the Secretary of the Navy to sign long-term leases with the City of Oakland, the Port of Oakland, and the City of Alameda for \$1. The Port of Oakland and the Navy recently signed leases for two parcels of FISC land. The Port was originally concerned that closure of FISC as a BRAC action would delay their large port development plan. The Port recognized that closure would allow the Port to acquire the land and would not interfere or prevent ongoing lease negotiations.

Commission Findings

The Secretary of the Navy removed FISC Oakland from the list of recommendations presented to him because of excessive job losses in California. The Commission added FISC Oakland for consideration. The Commission found employment levels and workload at FISC decreasing as the bases it supported were closed. FISC's primary function would be to operate office space for Government tenants.

The Commission agreed with the Richmond and Alameda communities that the closure of FISC land in their communities would facilitate transfer to the land. To clarify that these were distinct parcels of land the Commission addressed these parcels in a separate closure motion. The Commission and the Oakland community ultimately agreed that the closure of the main FISC compound in Oakland would not interfere with their ongoing lease negotiations or previously signed leases, and would facilitate transfer of the property. The proposed closure actions received the endorsement of the Port of Oakland and the mayors of Oakland, Alameda, and Richmond. The Commission also found that additional savings would result if the two major tenants at FISC, Military Sealift Command and Defense Finance and Accounting Service, move to other Government-owned space.

Commission Recommendation

The Commission finds the Secretary of Defense deviated substantially from final criteria 5 and 6. Therefore, the Commission recommends the following: realign the Fleet and Industrial Supply Center, Oakland. Close Point Molate Naval Refueling Station, Richmond, California. Close Navy Supply Annex, Alameda, California. The Commission finds this recommendation is consistent with the force-structure plan and final criteria.

Commission Recommendation II

The Commission finds the Secretary of Defense deviated substantially from final criteria 5 and 6. Therefore, the Commission recommends the following: close the Fleet and Industrial Supply Center, Oakland. Relocate Defense Finance and Accounting Service and Military Sealist Command to Government-owned space. The Commission finds this recommendation is consistent with the force-structure plan and final criteria.

B.2. P.L. 102-484 SEC. 2834 (OCTOBER 23, 1992)

SEC. 2834. LEASES OF PROPERTY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA.

- (a) LEASE AUTHORIZED WITH UNION PACIFIC RAILROAD COMPANY—
 - (1) The Secretary of the Navy may lease to the Union Pacific Railroad Company (in this subsection referred to as the "Company") not more than 15 acres of real property, together with improvements thereon, located at the Naval Supply Center, Oakland, California.

- (2) The lease authorized in paragraph (1) shall—
 - (A) be for an initial period of not more than 25 years;
 - (B) contain an option for the Company to extend the lease for an additional period of not more than 25 years; and
 - (C) contain the restriction that the Company use the leased property only for freight transportation purposes.
- (3) (A) As consideration for the lease of the real property under paragraph (1), the Company—
 - (i) shall pay to the Navy the long-term fair market rental value of the leased property; and
 - (ii) may be required to furnish additional consideration as provided in subparagraph (B).
 - (B) The Secretary may require that the lease include a provision for the Company—
 - (i) to pay the Navy an amount (as determined by the Secretary) for the costs of replacing at the Naval Supply Center, Oakland, California, the facilities vacated by the Navy on the leased property or to construct the replacement facilities for the Navy; and
 - (ii) to pay the Navy an amount (as so determined) for the costs of relocating Navy operations from the vacated facilities ties to the replacement facilities.
- (4) (A) Section 2667(d) of the title 20, United States Code, shall apply to amounts paid under paragraph (3)(A)(i).
 - (B) The Secretary may use amounts received under paragraph (3)(B) to pay for constructing new facilities, or making modifications to existing facilities, that are necessary to replace facilities vacated by the Navy on the leased property and for relocating operations of the Navy from the vacated facilities to the replacement facilities.
- (5) The Secretary may authorize the Company to demolish existing facilities on the leased property and, consistent with the restriction required by paragraph (2)(C), construct new facilities on the property for the use of the Company.
 - (b) LEASE AUTHORIZED WITH CITY OR PORT OF OAKLAND—
 - (1) The Secretary of the Navy may lease to the City of Oakland, California, or the Port of Oakland, California (in this subsection referred to as the "City" and the "Port", respectively), not more than 195 acres of real property, together with improvements thereon, located at the Naval Supply Center, Oakland, California.
 - (2) The lease authorized under paragraph (1) shall—
 - (A) be for a term of not more than 50 years; and
 - (B) shall contain the restriction that the City or the Port (as the case may be) use the leased property in a manner consistent with Navy operations conducted at the Naval Supply Center.
 - (3) (A) As consideration for the lease of the real property under paragraph (1), the City or the Port (as the case may be)—
 - (i) shall pay to the Navy the long-term fair market rental value of the leased property; and
 - (ii) may be required to furnish additional consideration as provided in subparagraph (B).
 - (B) The Secretary may require that the lease include a provision for the City or the Port (as the case may be)—
 - (i) to pay the Navy an amount (as determined by the Secretary) for the costs of replacing at the Naval Supply Center, Oakland, California, the facilities vacated by the Navy on the leased property or to construct the replacement facilities for the Navy; and
 - (ii) to pay the Navy an amount (as so determined) for the costs of relocating Navy operations from the vacated facilities to the replacement facilities.

- (4) The Secretary may not enter into the lease authorized by paragraph (1) until 21 days after the date on which the Secretary submits to the Committees on Armed Services of the Senate and House of Representatives a report containing an explanation of the terms of the proposed lease and a description of the consideration that the Secretary expects to receive under the lease.
- (5) (A) The Secretary may use amounts paid under paragraph (3)(A)(i) to pay for improvement, maintenance, repair, construction, or restoration activities at the Naval Supply Center, Oakland, California.
 - (B) The Secretary may use amounts received under paragraph (3)(B) to pay for constructing new facilities, or making modifications to existing facilities, that are necessary to replace facilities vacated by the Navy on the leased property and for relocating operations of the Navy from the vacated facilities to the replacement facilities.
- (6) The Secretary may authorize the City or the Port (as the case may be) to demolish existing facilities on the leased property and, consistent with the restriction required by paragraph (2)(B), construct new facilities on the property for the use of the City or the Port.
 - (c) ADDITIONAL TERMS.— The Secretary may require such additional terms and conditions in connection with the leases authorized under this section as the Secretary considers appropriate to protect the interests of the United States.
 - (d) REPEAL OF SUPERSEDED AUTHORITY.— Section 2338 of the National Defense Authorization Act for Fiscal Years 1988 and 1989 (Public Law 100-180; 101 Stat. 1225) is repealed.

B.3. P.L. 103-160 SEC. 2833 (NOVEMBER 30, 1993)

SEC. 2833. MODIFICATION OF LEASE AUTHORITY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA

- (a) EXPANSION OF LEASE AUTHORITY.— Paragraph (1) of subsection (b) of section 2834 of the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614) is amended by striking out "not more than 195 acres of real property" and all that follows through the period and inserting in lieu thereof "those portions of the Naval Supply Center, Oakland, California, that the Secretary determines to be available for lease."
- (b) CONSIDERATION. Paragraph (2) of such subsection is amended-
 - (1) by striking out "and" at the end of subparagraph (A);
 - (2) by striking out the period at the end of subparagraph (B) and inserting in lieu thereof"; and"; and
 - (3) by adding at the end the following new subparagraph: "(C) be for nominal consideration.".
- (c) CONFORMING AMENDMENTS.— Such subsection is further amended—
 - (1) in paragraph (2)(B), by striking out "shall";
 - (2) by striking out paragraphs (3), (4), and (5); and
 - (3) by redesigning paragraph (6) as paragraph (3).

B.4. P.L. 103-337 SEC. 2821 (OCTOBER 5, 1994)

SEC. 2821. ADDITIONAL LESSEE OF PROPERTY AT NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA.

Section 3834(b) the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614) is amended—

- (1) in paragraph (1)—
 - (A) by striking out "City" the second place it appears and inserting in lieu thereof "Cities"; and
 - (B) by inserting "the City of Alameda, California," after "California," the first place it appears; and
- (2) in paragraphs (2) and (3), by striking out "City" each place it appears and inserting in lieu thereof "Cities."

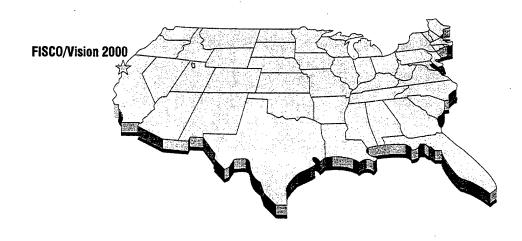
B.5. P.L. 104-106 SEC. 2867 (FEBRUARY 10, 1996)

SEC. 2867. LAND CONVEYANCE ALTERNATIVE TO EXISTING LEASE AUTHORITY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA

Section 2834(b) of the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614), as amended by section 2833 of the Military Construction Authorization Act for Fiscal Year 1994 (division B of Public Law 103-160; 107 Stat. 1896) and section 2821 of the Military Construction Authorization Act for Fiscal Year 1995 (division B of Public Law 103-337; 108 Stat. 3057), is further amended by adding at the end the following new paragraphs:

- "(4) In lieu of entering into a lease under paragraph (1), or in place of an existing lease under that paragraph, the Secretary may convey, without consideration, the property described in that paragraph to the City of Oakland, California, the Port of Oakland, California, the City of Alameda, California, or the City of Richmond, California, under such terms and conditions as the Secretary considers appropriate.
- "(5) The exact acreage and legal description of any property conveyed under paragraph (4) shall be determined by a survey satisfactory to the Secretary. The cost of each survey shall be borne by the recipient of the property."

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APPENDIX C DRAFT SECTION 4(f) EVALUATION

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Appendix C Draft Section 4(f) Evaluation

Introduction

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that "[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that "[t]he Secretary of [Transportation] may approve a transportation program or project... requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area refuge, or site) only if

- (1) there is no prudent and feasible alternative to using that land; and
- (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

In general, a section 4(f) "use" occurs with a Department of Transportation-approved project or program when (1) section 4(f) land is permanently incorporated into a transportation facility; (2) when there is a temporary occupancy of section 4(f) land that is adverse in terms of the section 4(f) preservationist purposes as determined by specified criteria (23 CFR 771.135 [p] [7]); and (3) when section 4(f) land is not incorporated into the transportation project, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under section 4(f) are substantially impaired (constructive use).

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f).

This Section 4(f) evaluation will be used in the decision-making process by the Navy, Port of Oakland, and Federal Highway Administration (FHWA) to select the Preferred Alternative for the Port's Vision 2000 Program and to authorize using Intermodal Surface Transportation Efficiency Act (ISTEA) funding for constructing a joint intermodal terminal (JIT). The Navy and the Port have consulted with the public agencies having jurisdiction over the 4(f) resources in the project area during the assessment of impacts and the development of measures to minimize harm.

PROPOSED ACTION

In response to the recognized need to increase capacity and to improve efficiency of integrated intermodal cargo transportation services, the Port of Oakland has developed the Vision 2000 Program. This program is a schedule of phased improvements and development projects to modernize and expand the Port's facilities. The Vision 2000 Program involves reuse and development of the US Navy's Fleet and Industrial Supply Center Oakland (FISCO), formerly known as the Naval Supply Center, located in West Oakland, as well as 290 acres beyond the FISCO property boundaries.

Chapter 1, Purpose and Need, Section 1.3, pages 1-6 and 1-7 in Volume I of this EIS/EIR explains the applicable conditions affecting ownership of the FISCO property. In summary, as a result of this project, a portion of FISCO will be conveyed in fee to the Port through special legislation, allowing the Secretary of the Navy to convey the nonreversionary portion of FISCO to the Port. The remainder of FISCO will be conveyed by a reversionary clause in the deed of trust for FISCO. Pending final closure of FISCO, the Port is leasing portions of FISCO from the Navy. Chapter 2, Section 2.2.5, pages 2-10 through 2-12, describes the various geographic components that comprise the Port's Vision 2000 Program.

The Vision 2000 Program consists of three common elements: JIT, marine terminals, and public waterfront access and marine habitat enhancement (see Chapter 2, Section 2.2.3, Common Elements of Port Reuse Alternatives, page 2-6 in Volume I). The environmental consequences associated with full buildout of all three Vision 2000 elements by 2010 are evaluated in Chapter 5 of Volume I.

The following Vision 2000 Program alternatives are evaluated in Volume I:

- Maximum Marine/Maximum Rail;
- Minimum Marine/Minimum Rail;

- Maximum Marine/Minimum Rail; and
- Reduced Harbor Fill.

These four alternatives represent variations on the design and configuration of the Vision 2000 Program components, including the JIT. Table 2-3 in Volume I of this EIS/EIR provides an overview of facilities and other operations features of the four JIT alternatives. These four alternatives were configured to represent a range of potential impacts to different resources. For example, rail track storage on the Oakland Army Base property is included for only one of the four alternatives. Similarly, although both the Maximum Marine/Maximum Rail and Reduced Harbor Fill Alternatives would serve both Southern Pacific/Union Pacific and Burlington Northern-Santa Fe railroads, the Reduced Harbor Fill Alternative is configured in a manner that avoids impacts to one of the historic districts in the project area.

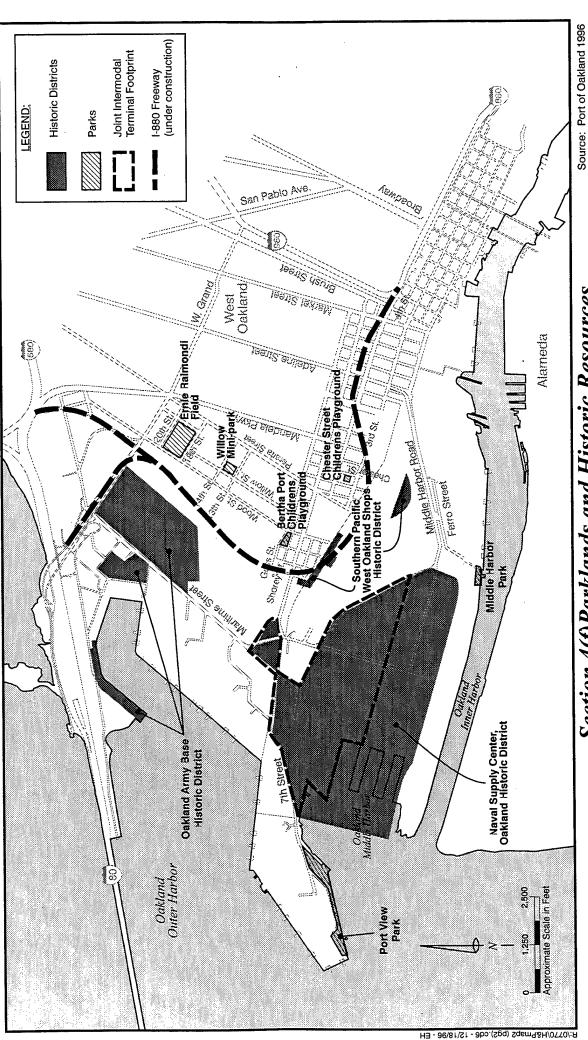
A detailed discussion of the reasons why the four Vision 2000 Program alternatives were selected is described in Chapter 2, Alternatives, Including the Proposed Action, Section 2.2.2, pages 2-3 through 2-5 in Volume I of this EIS/EIR. The maximum JIT footprints proposed under these four alternatives are presented on Figures C-1, C-2, C-3, and C-4.

The purpose of the JIT is to expand and improve the existing intermodal operations of the Southern Pacific and Union Pacific Railroads in Oakland, California, and to provide access for the international segment of the Burlington Northern-Santa Fe Railroad business currently handled in Richmond, California, approximately 17.7 km (11 miles) north of the Port area. All three Vision 2000 elements are separate and independent of one another. Therefore, because the JIT would provide efficient rail access to existing Port terminals in the Oakland Inner and Outer Harbors, its successful implementation does not depend on construction and operation of the new marine terminals proposed as part of the Vision 2000 Program.

The Metropolitan Transportation Commission (MTC) has authorized ISTEA funding for the JIT. To prepare the property after acquisition, a large number of structures must be demolished, utilities relocated and constructed, grading undertaken, and several roadways constructed. The MTC has authorized funds placed in the State Transportation Improvement Program (TIP) through ISTEA for seven million dollars for JIT construction.

SECTION 4(F) PROPERTY

There are three historic districts in the project area that are eligible for the National Register of Historic Places (NRHP): the Naval Supply Center, Oakland (NSCO), Oakland Army Base, and Southern Pacific West Oakland Shops Historic Districts (see Figures C-1, C-2, C-3, and C-4). In 1990, the State Historic

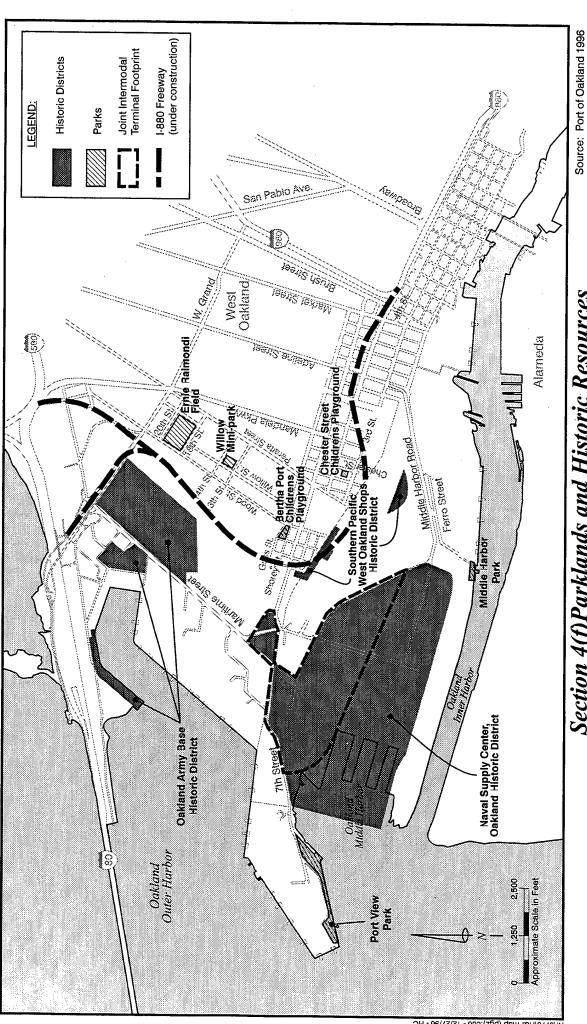




Fleet & Industrial Supply Center Oakland and Port of Oakland







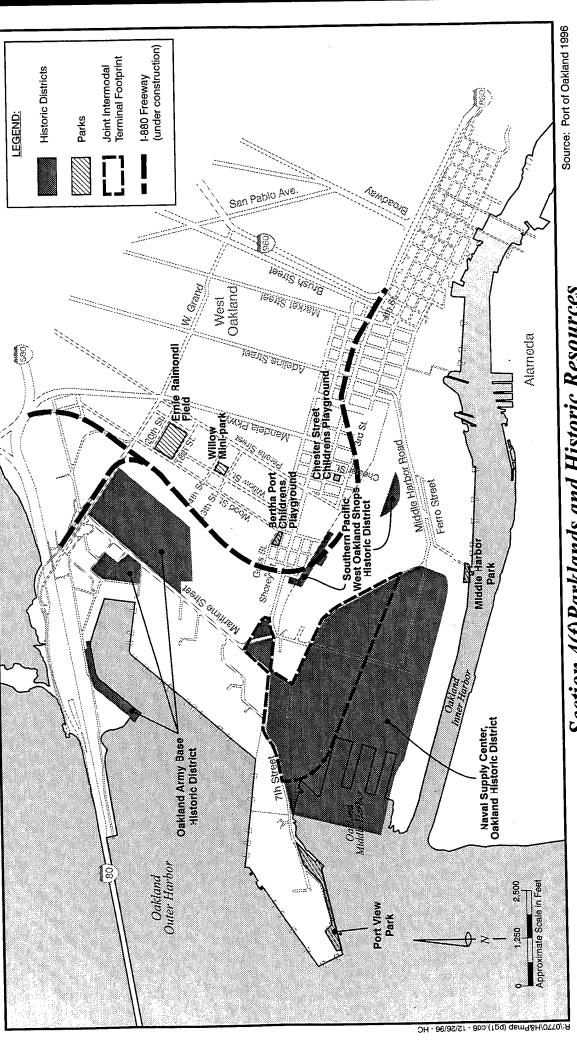
Section 4(f) Parklands and Historic Resources Minimum Marine/Minimum Rail Alternative

Fleet & Industrial Supply Center Oakland and Port of Oakland

Figure C-2



C-5



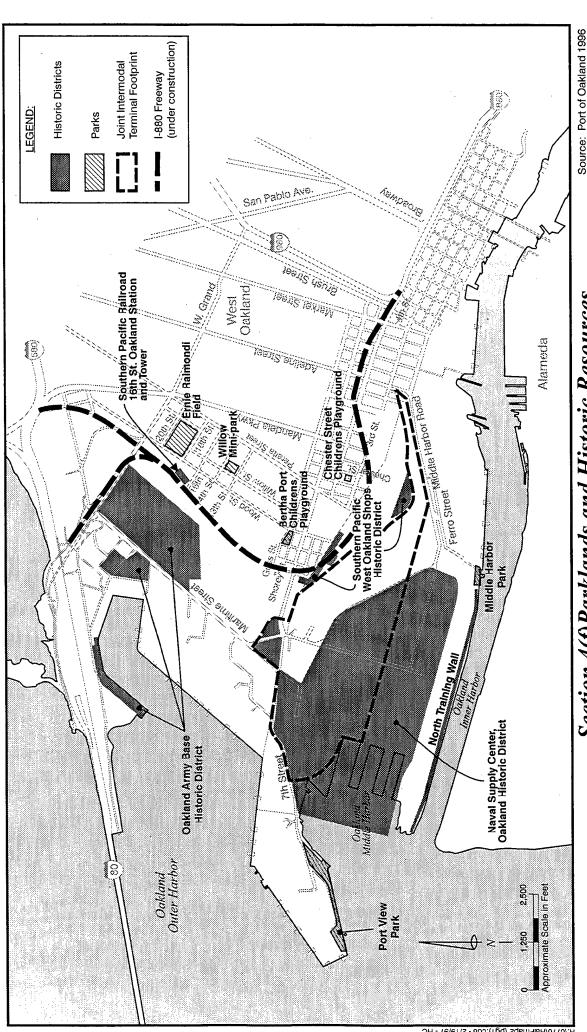
Section 4(f)Parklands and Historic Resources Maximum Marine/Minimum Rail Alternative

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and Port of Oakland

Figure C-3









Fleet & Industrial Supply Center Oakland and Port of Oakland







Preservation Officer (SHPO) concurred that these three districts are eligible for the NRHP (see Section 3.4 in Volume 1). However, documentation has been undertaken to demonstrate that the Southern Pacific West Oakland Shops Historic District is no longer eligible for inclusion in the NRHP.

There are no known prehistoric or historic archaeological sites identified on FISCO property or in the project area. Because of past dredging and filling, the probability of encountering any subsurface archaeological resources on FISCO or in the project vicinity is very low.

Naval Supply Center, Oakland Historic District

The NSCO is owned by the US Navy and is approximately 214 ha (528 acres). The NSCO is located in West Oakland, approximately 3.2 km (two miles) west of the Oakland central business district, on the eastern shoreline of San Francisco Bay. The boundaries of this historic district are shown on Figures C-1, C-2, C-3, and C-4.

The Navy constructed NSCO in 1940 to provide logistical support for military activities in the Pacific region during World War II. Land use at FISCO has been characterized by extensive military support facilities, including warehouses, office buildings, some military housing, and the Middle Harbor berths and wharf area. Approximately 89.1 ha (220 acres) of the FISCO property are leased to the Port of Oakland for use as general transportation support activities, including warehousing, container depot activities, loading, and container cargo stations.

In 1990, the NSCO Historic District included 84 buildings and structures that contributed to the significance of the historic district and 42 noncontributing buildings and structures within the mapped boundaries. The list of contributing buildings and structures that existed at FISCO in 1990 are identified in Table 3-6, Section 3.4, page 3-32 in Volume I of this EIS/EIR.

Access to the NSCO Historic District is via two gates. Gate 1 is at the northern end of the historic district. From Gate 1, a bridge structure carries traffic across 7th Street to an at-grade intersection with 3rd Street. Gate 2 is at the eastern end of the historic district off of Middle Harbor Road and provides access to a perimeter road that runs roughly parallel to Middle Harbor Road for approximately one mile.

In 1996, approximately 2,600 Navy personnel were employed at the NSCO Historic District. An additional 400 employees that represent tenants of the Port work at the Harbor Transportation Center, located in the eastern half of the site on property leased by the Port.

Oakland Army Base Historic District

The Oakland Army Base Historic District is owned by the US Army. The northwest and northeast sections of this historic district are approximately 6.3 ha (15.5) and 15.9 ha (39.5 acres), respectively. The northwest section is comprised

of two discontinuous segments; the first segment (4.05 ha [10 acres]) is at the northern edge of the Oakland Outer Harbor, and the second segment is west of Maritime Street and south of Alaska Street. The northeast section of this historic district is between Maritime Street and the Southern Pacific Desert Yard south of West Grand Avenue. The boundaries for the Oakland Army Base Historic District are shown on Figures C-1, C-2, C-3, and C-4.

Twenty-four buildings and structures at the Oakland Army Base have been determined eligible for listing in the NRHP; these are identified by building number in Table 3-7, Section 3.4, page 3-35 in Volume I of this EIS/EIR. The contributing buildings in the first segment of the northwest section are made up of three wharves and a shed, while the contributing buildings in the second segment are primarily storehouses and administrative buildings. Contributing buildings in the northeast section are primarily large warehouses and a switch engine building at the Knight Yard.

The main access to the Oakland Army Base Historic District is Maritime Street. Access to the wharves in the northwest section of the base is via Burma Road off Maritime Street. There are 19 active Department of Defense or federal agencies as tenants and five nonmilitary agency tenants on the Oakland Army Base as of July 5, 1996.

Southern Pacific West Oakland Shops Historic District

The Southern Pacific West Oakland Shops Historic District is owned by the Southern Pacific Railroad. This historic district includes two separate segments within the larger Southern Pacific West Oakland Railyard. The northern segment, approximately one ha (2.5 acres), is at the northern extreme of the Southern Pacific Railyard, from west of Bay Street to east of Wood Street. The southern segment, approximately 1.4 ha (3.5 acres), is separated from the northern segment by a bank of railroad tracks.

This historic district includes 14 buildings, 12 of which were identified as contributors, eight in the northern segment near Wood Street and four in the southern segment. The eligible buildings within this district are listed in Table 3-8, Section 3.4, page 3-37 in Volume I of this EIS/EIR. These buildings include a telephone exchange, electrical shop, signal tower, lumber shed, freight depot, and mill.

Caltrans and Southern Pacific Railroad as part of the Cypress Freeway reconstruction in the early 1990s demolished four buildings within the northern segment of this historic district. A 1991 MOA between the Federal Highway Administration, Department of the Army, SHPO, and the Advisory Council on Historic Preservation (ACHP) called for recordation of these four buildings to the standards of the Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) prior to demolition, as well as attempts to market the buildings for relocation off-site. The marketing attempts were

unsuccessful and the buildings were recorded and demolished. The four demolished buildings were located in the northern segment near Wood Street; this demolition removed half of the contributing buildings in that area.

Subsequent to these demolition activities, there was no determination if whether the integrity of the original historic district remained. Documentation has been undertaken to demonstrate that the qualities and characteristics that originally rendered this property a historic district were destroyed when the "core" district (i.e., buildings in the northern segment) were demolished; therefore, the remaining ancillary buildings in the southern segment of this district would no longer be eligible for inclusion in the NRHP. This documentation will be submitted to the SHPO for concurrence and the results recorded in the Final Section 4(f) evaluation.

IMPACTS ON SECTION 4(F) PROPERTIES

All four project alternatives would involve further demolition of the NSCO Historic District. The Maximum Marine/Minimum Rail Alternative would result in demolition in a portion of the Oakland Army Base Historic District and the Maximum Marine/Maximum Rail Alternative would result in demolition in a portion of the Southern Pacific West Oakland Shops Historic District.

NSCO Historic District

All four project alternatives would adversely effect the NRHP-eligible NSCO Historic District because an undertaking is considered to have an adverse impact when the effect on a historic property may diminish the integrity of that resource. The transfer, lease, or sale of a property from federal ownership without adequate restrictions or deed covenants to ensure preservation is an adverse effect and would be a significant but mitigable impact. This impact would apply to all FISCO contributing buildings and structures within the NRHP-eligible NSCO Historic District.

Under any of the four project alternatives, the Port would demolish all or nearly all contributing buildings within the NSCO Historic District. This demolition will complete a program that began in 1994, through which much of the NSCO Historic District would be demolished to make way for expansion of the Port.

In 1994, the Navy, the Port, the SHPO, and the ACHP executed a Memorandum of Agreement (MOA) pertaining to leasing up to approximately 89 ha (220 acres) of the 214-ha (528-acre) FISCO to the Port. The MOA accepted demolition of any buildings within 77 ha (190 acres) of the 89-ha (220-acre) existing lease area (see Figure 3-8, page 3-33 in Volume I).

The MOA called for mitigation measures, including recording selected buildings to HABS standards, preparing a Historic and Archeological Resources Protection (HARP) plan for the remainder of the base, and other mitigation measures. Some of these measures were implemented. Other measures, however, were

interrupted by the decision in 1995 to close the base. The demolition accepted under the 1994 MOA will effectively destroy much of the NSCO Historic District by demolishing 39 of the 84 contributing buildings.

Under all four project alternatives, JIT construction would demolish most if not all of the remaining contributing buildings and would result in an adverse effect and a substantial adverse change to this historic property. However, as part of a proposed Memorandum of Agreement (MOA) for protecting historic resources at the NSCO Historic District, three existing officers quarters will be available for moving off-site. These quarters could be relocated adjacent to and west of the JIT in a proposed public access area around the Oakland Middle Harbor (see Figures 2-4, 2-8, and 2-10 in Chapter 2, Volume I).

Access

If the officers quarters are relocated to the Middle Harbor public access area, permanent access would be provided via 7th Street. Access to these resources could be affected during JIT construction by increased truck traffic along 7th Street under all four reuse alternatives. However, measures outlined below under Measures to Minimize Harm will be taken to keep this road open to public through-traffic during construction and therefore not reduce or interfere with public use of these resources.

Noise

Limited data are available concerning existing noise levels in the immediate project area. Community noise equivalent levels (CNEL) on FISCO were estimated to be above 75 decibels (dB) in the mid-1980s (US Navy 1990). If the FISCO officers quarters are relocated to the Middle Harbor public access area, they would remain on FISCO property and be subject to similar high ambient noise levels from existing truck and train traffic. Therefore, future JIT-induced noise is not anticipated to substantially impair the use or enjoyment of these officers quarters. Construction noise would be temporary in duration and would similarly not reduce public enjoyment of these 4(f) resources.

Air Quality

The air quality monitoring stations closest to the project site are located on Alice Street in Oakland near Jack London Square and at the county hospital in San Leandro. Table 3-23 in Volume I of the EIS/EIR summarizes recent monitoring data for ozone, carbon monoxide (CO), and PM10.

Between 1990 and 1995, peak 1-hour carbon monoxide emissions recorded at the Alice Street monitoring station ranged from 5.0 to 9.0 parts per million (ppm) and peak 8-hour values ranged from 3.9 to 6.8 ppm. Carbon monoxide dispersion modeling results show that peak 1-hour emissions attributable to the entire Vision 2000 Program (of which the JIT represents only a fraction of total future traffic) would range from 5.3 ppm (under the Maximum Marine/Maximum Rail Alternative) to 6.9 ppm (under the Reduced Harbor Fill Alternative) (see Table 5-

11, Section 5.1.10.3, page 5-65 in Volume I). Projected peak 8-hour concentrations would range from 4.1 (under the Minimum Marine/Minimum Rail Alternative) to 5.7 (under the Maximum Marine/Minimum Rail Alternative). Therefore, future carbon monoxide emissions would fall within the range of what has been historically recorded in the project area and project emissions would not substantially impair the use or enjoyment of the FISCO officers quarters, should they be relocated.

Projected future ozone precursor emissions in the project area without the project would be high compared to the Bay Area Air Quality Management District's (BAAQMD) regulatory threshold of 15 tons per year (tpy): 231.4 tpy of reactive organic compounds (ROG), 2,337.6 tpy of nitrogen oxide (NOx), 378.6 tpy of sulfur oxide (SOx), and 626.9 tpy of suspended particulate matter (PM10). JIT implementation under all four reuse alternatives would result in increased ozone precursor emissions that would further degrade these conditions (see Tables 5-9 and 5-10, Section 5.1.10.2, pages 5-61 and 5-62 in Volume I). However, these emissions would not substantially impair use or enjoyment of the relocated officers quarters because they would be located in an area already affected by degraded air quality.

Visual

Relocating the officers quarters to the Middle Harbor public access area would have a beneficial visual effect. Visitors to the officers quarters would have more open and expansive direct viewing opportunities west towards San Francisco and the Bay Bridge because these quarters would no longer be surrounded by low-rise military warehouses.

Wildlife, Vegetation, and Water Quality

The NSCO Historic District is located in a disturbed, developed area that supports limited wildlife, vegetation, and water resources. These resources are not important factors in the NSCO Historic District.

Oakland Army Base Historic District

The Maximum Marine/Minimum Rail Alternative would result in a direct use and adverse effect to the Oakland Army Base Historic District in two respects. First, it would expand the proposed rail terminal into the Oakland Army Base Knight Yard, a contributing element of the district. Second, it would demolish or modify a number of on-site buildings. Demolition would occur in the northeast section of the historic district. Plans do not allow for precise identification of the number of contributing buildings that could be demolished, but it appears that up to seven large warehouse buildings could be demolished under this scenario. Other non-historic buildings may be demolished as well. Therefore, the Maximum Marine/Minimum Rail Alternative would result in an adverse effect and a substantial adverse change to this historic property. The other three JIT alternatives would not have a direct use of the Oakland Army Base.

Access

Access to the Oakland Army Base Historic District would not be substantially affected by JIT operations. According to the Vision 2000 traffic analysis, level of service at intersections in the vicinity of the Oakland Army Base (Maritime/Burma, Maritime/West Grand, and Maritime/14th) would not be adversely affected as a result of the project under any of the four reuse alternatives (of which the JIT represents only a fraction of total development). Therefore, access to this historic district would not be substantially restricted (see Tables 5-7 and 5-8 on pages 5-55 and 5-56, Tables 5-13 and 5-14 on pages 5-92 and 5-93, Tables 5-15 and 5-16 on pages 5-114 and 5-115, and Tables 5-17 and 5-18 on pages 5-134 and 5-135 in Volume I). Measures will be implemented to control traffic during JIT construction (see Measures to Minimize Harm).

Noise

The Oakland Army Base Historic District is not a noise-sensitive area and is subject to high ambient noise levels from existing rail operations in the Oakland Army Base Knight Yard and adjacent Southern Pacific Desert Yard and nearby truck traffic. Therefore, future JIT-induced noise under any of the four alternatives is not anticipated to substantially impair the use or enjoyment of this district. Construction noise would be temporary in duration and would similarly not adversely effect public enjoyment of this 4(f) resource.

Air Quality

As described above, future carbon monoxide emissions would fall within the range of what has been historically recorded in the project area and would not substantially impair the use or enjoyment of the Oakland Army Base Historic District. In addition, projected increases in ozone precursor emissions under all four reuse alternatives would not restrict use or enjoyment of this district because it is located in an area already characterized by degraded air quality.

All four project alternatives would require demolishing existing FISCO structures; this activity would be a temporary source of fugitive dust and construction vehicle emissions. However, when properly controlled through best management practices, dust emissions would not adversely effect the use or enjoyment of the Oakland Army Base Historic District because it is located more than one-half mile from FISCO, where major demolition activities would occur.

Visual

Visual resources were qualitatively evaluated by assessing the nature and extent of change in existing landscape character. Demolishing buildings and multi-story warehouses in the NSCO Historic District under all four project alternatives would have a long-term beneficial visual effect to users at the Oakland Army Base Historic District. Demolition would create more expansive viewing opportunities to the west towards the Oakland Middle Harbor. Short-term

building demolition activities may result in temporary visual impacts; however, given the industrial nature of the existing FISCO site and surrounding project area, any visual intrusion would not interfere substantially with use of nearby 4(f) resources.

Under the Maximum Marine/Minimum Rail Alternative, proposed railcar storage on the Oakland Army Base Knight Yard would not have a noticeable or intrusive visual effect because the Knight Yard and adjacent Southern Pacific Desert Yard provide similar uses.

Wildlife, Vegetation, and Water Quality

The Oakland Army Base Historic District is located in a disturbed, developed area that support limited wildlife, vegetation, and water resources. These resources are not important factors at this historic district.

Southern Pacific West Oakland Shops Historic District

The Maximum Marine/Maximum Rail Alternative would result in a direct use and adverse effect to four buildings in the Southern Pacific West Oakland Shops Historic District. Demolition of the four buildings would occur in the southern subdistrict of this historic district. Reassessing the eligibility of this historic district for listing in the National Register is ongoing. Documentation to support the finding that this district is no longer eligible for inclusion in the NRHP will be submitted to the SHPO for concurrence and the results recorded in the Final Section 4(f) evaluation. The other three JIT alternatives would not have a direct use of the Southern Pacific West Oakland Shops Historic District.

Access

The Southern Pacific West Oakland Shops Historic District is currently not accessible to the public. Similar to what is described for the Oakland Army Base, private access to this historic district would not be substantially restricted during JIT operations. During JIT construction, access could be temporarily affected by increased truck traffic along Middle Harbor Road. However, measures outlined under Measures to Minimize Harm would be undertaken to preserve access to this 4(f) resource during construction.

Noise

The Southern Pacific West Oakland Shops Historic District is not a noise-sensitive area and is subject to high noise levels from existing rail operations in the Southern Pacific Rail Yard. Therefore, future JIT-induced noise is not anticipated to substantially impair the use or enjoyment of this district.

Air Quality

As described above, future carbon monoxide emissions during JIT operations would fall within the range of what has been historically recorded in the project area and would not substantially impair the use or enjoyment of this district. Furthermore, ozone precursor emissions under all four JIT alternatives would not

adversely effect this district because it is located in an area already characterized by degraded air quality. Dust emissions during buildings demolition activities would be properly controlled by best management practices.

Visual

The buildings in the southern segment of this historic district are located in an existing heavily industrial area and subsequent JIT development would not impair or degrade the visual integrity of this historic district.

Wildlife, Vegetation, and Water Quality

The Southern Pacific West Oakland Shops Historic District is located in a disturbed, developed area that supports limited wildlife, vegetation, and water resources. These resources are not important factors in this historic district.

ALTERNATIVES

The first step under Section 4(f) is to determine which alternatives are feasible and prudent. An alternative may be rejected as not being feasible and prudent for any of the following reasons:

- Not meeting the project purpose and need;
- Excessive cost of construction;
- Severe operational or safety problems;
- Unacceptable adverse social, economic, or environmental impacts;
- Serious community disruption; or
- An accumulation of a lesser magnitude of the foregoing types of factors.

Harm to a Section 4(f) resource should not be included in those factors which are considered in determining whether an alternative is feasible and prudent. When sufficient analysis has been completed to demonstrate that a particular alternative is not feasible and prudent, no additional analysis or consideration of that alternative is required.

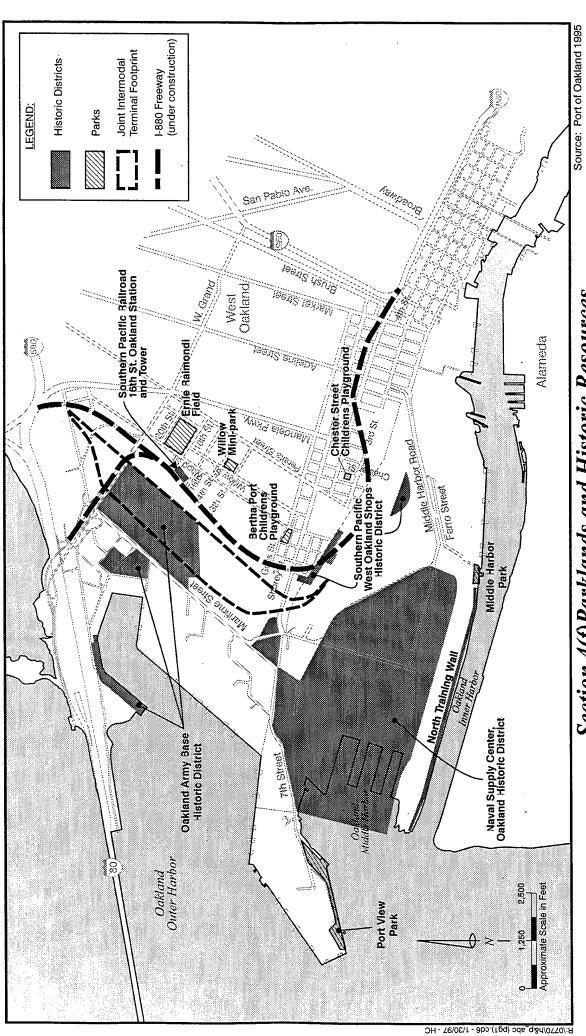
After eliminating the alternatives that are not feasible and prudent, a determination must be made on whether one or more of the remaining alternatives avoids the use of land from Section 4(f) resources. If such avoidance alternatives exist, one of them must be selected. However, if all of the remaining feasible and prudent alternatives use land from Section 4(f) resources, then a least harm analysis must be performed to determine which alternative does the least overall harm to Section 4(f) resources. Where there is little or no difference in the overall harm to the Section 4(f) resources, any of the alternatives may be selected.

FISCO is within the Port jurisdiction and is designated as a port priority use area in the April 1996 San Francisco BCDC and MTC Seaport Plan Update. Port priority use areas include marine terminals and directly related ancillary activities, such as container freight stations, as well as support transportation uses, including trucking and railroad yards. The location of the four Vision 2000 project alternatives evaluated in this EIS/EIR was based largely on the requirements for efficient maritime cargo transportation operations, including providing for enhanced joint intermodal rail terminal capability. This issue is further discussed in Volume I, Chapter 2, pages 2-3 through 2-5 of this EIS/EIR. Developing a JIT consistent with the Seaport Plan Update's port priority use designation restricts the range of alternatives that are feasible for evaluation. The FISCO site provides the most readily available and underused acreage of significant size in the Port area for developing the JIT.

In considering alternatives that do not use the FISCO property, the Port identified the eastern portion of the Oakland Army Base, located north of FISCO, referred to as Footprint Alternative A (Figure C-5). Approximately 200 acres in the eastern half of the Army base, along the western edge of the Southern Pacific's Desert Yard, extending from 7th Street north to the I-80/I-580 distribution structure, initially were considered as a potential location for the JIT. This location would provide good rail access and would leave all of FISCO available for marine terminal development. However, Footprint Alternative A was determined to be infeasible as an alternative site because the base is not within the Port's jurisdiction and the proposed rail terminal footprint would not meet the project's optimum engineering criteria. For example, this site would be too small and too short to accommodate expected train volumes and track lengths. In addition, the Grand Avenue viaduct would bisect the terminal footprint and, therefore, would cause potential overhead clearance problems.

The Port evaluated two additional JIT footprints on FISCO and Southern Pacific Railyard property during preliminary JIT studies. Footprint Alternative B encompasses Southern Pacific's entire existing intermodal facility plus the eastern portion of FISCO (Figure C-6). This footprint would leave most of FISCO available for marine terminal use. This alternative would have good mainline rail access, but it lacked loading tracks of sufficient length. The loading track curvature within the facility would not meet Southern Pacific and Union Pacific requirements and the facility size would be too small to handle optimum JIT volumes.

Footprint Alternative C consists of a strip of tracks running east-west and covering the Southern Pacific's intermodal facility and the center of the FISCO property (Figure C-7). This footprint would allow design of a "single-ended" facility that maximizes track lengths and minimizes track curvature. However, because this layout allows train access from only one end of the facility (as opposed to a double-ended facility that relieves congestion by providing twice as

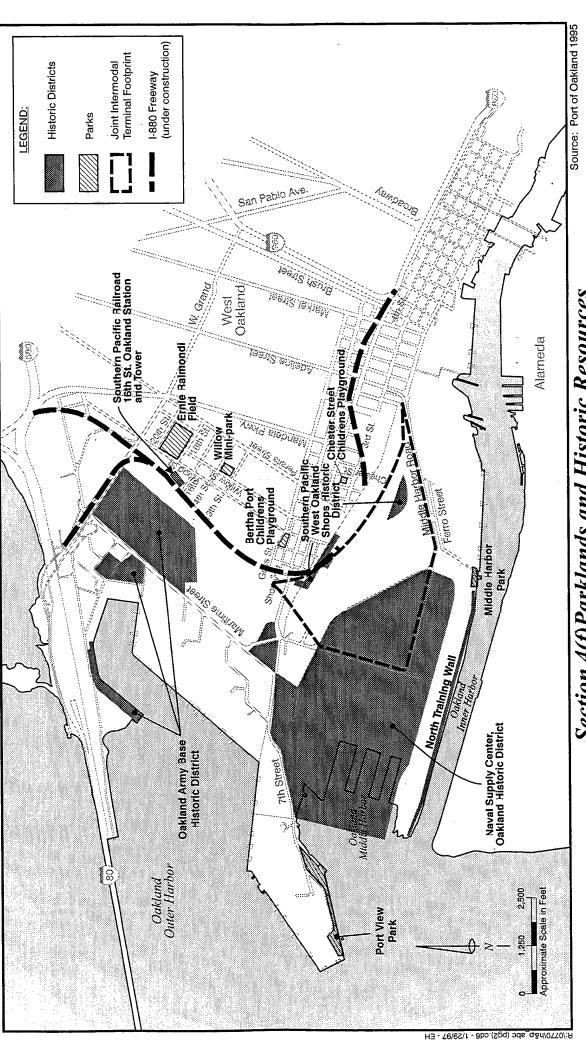




Fleet & Industrial Supply Center Oakland and Port of Oakland

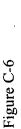




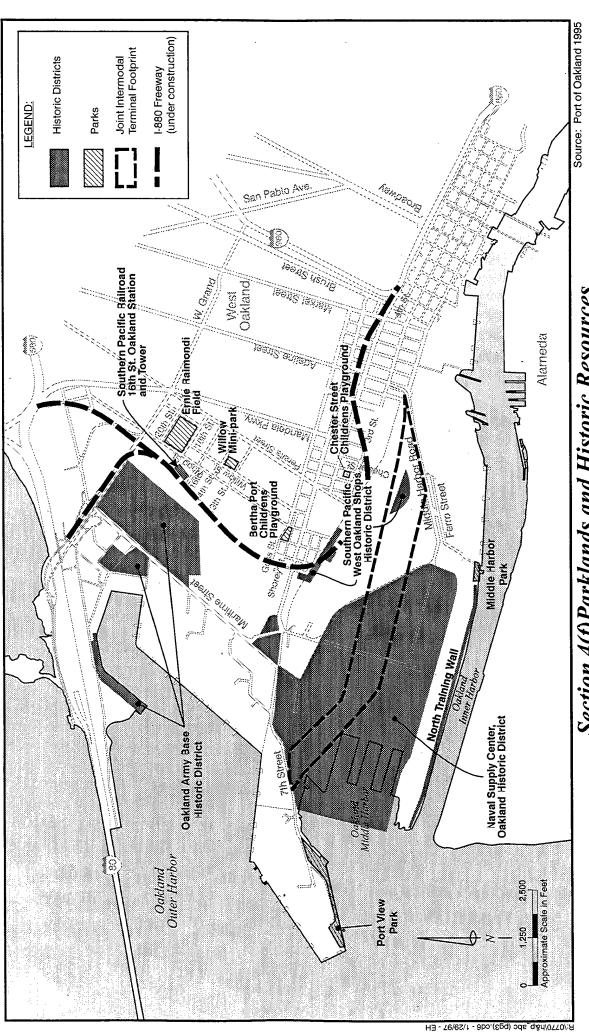




Fleet & Industrial Supply Center Oakland and Port of Oakland









Fleet & Industrial Supply Center Oakland and Port of Oakland





many ways to enter, exit, and switch in the yard), this alternative footprint was determined to make rail operations relatively difficult.

Table C-1 illustrates the alternative selection process described above. Footprint Alternatives A, B, and C were determined not to be feasible and prudent because they did not fully meet the project purpose and need and were problematic from an operations stand point. A Section 4(f) evaluation is not necessary for these alternatives and no further analysis is warranted.

Table C-1
Alternatives Considered for Section 4(f) Resources

Alternative	Feasible and Prudent	Uses Section 4(f) Land	Relative Net Harm to Section 4(f) Land After Mitigation
Footprint Alternative A	No	Yes (NA)	NA
Footprint Alternative B	No	Yes (NA)	NA
Footprint Alternative C	No	Yes (NA)	NA
Maximum Marine/ Maximum Rail Alternative	Yes	Yes	Greater
Minimum Marine/ Minimum Rail Alternative	Yes	Yes	Lesser
Maximum Marine/ Minimum Rail Alternative	Yes	Yes	Greater
Reduced Harbor Fill Alternative	Yes	Yes	Lesser

NA: Since this alternative is not feasible and prudent, it should be eliminated from further consideration. Whether Section 4(f) land is used and the relative harm to Section 4(f) protected properties are no longer relevant factors.

The remaining four project alternatives were determined to be feasible and prudent in terms of meeting the project's purpose and need as well as the project's engineering and design criteria. However, each of these four alternatives would result in a "direct use" of the NSCO Historic District. In addition, the Maximum Marine/Minimum Rail Alternative would directly use a portion of the Oakland Army Base Historic District and the Maximum Marine/Maximum Rail Alternative would directly use a portion of the Southern Pacific West Oakland Shops Historic District. Therefore, the Minimum Marine/Minimum Rail and Reduced Harbor Fill Alternatives were determined to have the least overall harm to Section 4(f) historic resources.

None of these remaining project alternatives could avoid each and every 4(f) resource in the project area while meeting the minimum size thresholds needed for cargo handling and transfer needed to reasonably develop a JIT. There are no other appropriate locations in the Bay Area that would be suitable for the proposed JIT. The proposed project location is situated close to the Oakland Inner Harbor Channel, the only deep-draft navigation channel within the Port jurisdiction that can provide marine access to a joint intermodal facility. In addition, the proposed JIT location is ideally situated close to existing rail and highway infrastructure that will expedite the transport of cargo between vessels, trains, and trucks for efficient distribution of goods.

To avoid all section 4(f) resources, the Port would have to develop the JIT on other property within or beyond its jurisdiction. Although there may be other land available that would not directly effect 4(f) resources, use of other property away from the FISCO property could involve additional impacts that would not support the project's purpose and need to increase operating rail efficiency. For example, JIT construction at another location may not be within close proximity to existing rail corridors, therefore increasing the drayage distance to transport cargo that in turn would result in traffic and air quality impacts. In addition, unlike the FISCO site, other project locations may not be specified as a port priority use pursuant to the April 1996 San Francisco Bay Conservation and Development Commission and Metropolitan Transportation Commission Seaport Plan Update.

One nearby site that is designated for port priority use is 220 acres in the northwestern corner of Alameda Island along the southern edge of the Oakland Inner Harbor. However this site, part of Naval Air Station (NAS) Alameda, contains potential 4(f) resources, including a historic wall along the Inner Harbor shoreline and habitat for the endangered California least tern. Furthermore, although marine vessels can access this site via the Inner Harbor, there are no linkages to existing rail corridors. To implement a JIT on this site, rail tracks would have to be constructed either under or across the Oakland Inner Harbor to connect to existing Union Pacific/Southern Pacific rail lines. This type of activity would result in significant traffic and air quality impacts.

If there is an available alternative site adjacent to the bay that avoids all section 4(f) resources, it would likely require the need to construct and/or relocate rail corridors and/or deep-draft marine terminals. This site would not be efficient for Port operations because it would be isolated from existing Port facilities and other necessary infrastructure required to operate a JIT and would result in much greater physical impacts compared to the proposed project. Therefore, project alternatives have been limited to variations of JIT designs that maximize use of FISCO rather than other locations on non-FISCO property.

Consultation pursuant to Section 106 of the National Historic Preservation Act regarding Port demolition in the NSCO Historic District was conducted in 1994.

This consultation process concluded with the signing of an MOA that authorized demolition of buildings and structures located on about one-half of the eligible NSCO Historic District. Since the MOA was executed, thirteen contributing buildings have been demolished and another 29 are scheduled for demolition by September 1998. This work will occur with or without use of the ISTEA funds. To a large degree, the historic district has already been "used." It has suffered a substantial loss of integrity through demolitions already accomplished and will suffer much greater loss of integrity through demolitions approved but not yet accomplished in the 1994 MOA.

MEASURES TO MINIMIZE HARM

The Port, Navy, and Oakland Landmarks Preservation Advisory Board have agreed to mitigation measures that will take into account the larger areas of impacts associated with Navy disposal of all of FISCO. These mitigation measures are summarized in Section 4.1.4.2, Impact 1, pages 4-9 and 4-10 and Section 5.1.4.2, Impact 1, pages 5-15 and 5-16 in Volume I of this EIS/EIR and are included in a proposed amended historic mitigation plan in Appendix G in Volume II of this EIS/EIR.

The Port has also identified potential mitigation to impacts on the Oakland Army Base and Southern Pacific West Oakland Shops historic districts (see Section 5.3.4.2, Impact 2, page 5-105 and Section 5.1.4.2, Impact 2, page 5-16). However, if the SHPO concurs with the determination that the Southern Pacific West Oakland Shops Historic District is no longer eligible for listing on the NRHP, then the discussion of potential impacts to this property will be revised accordingly in the Final EIS/EIR and the Final Section 4(f) evaluation.

To minimize some potential short-term impacts during JIT construction, the following measures are recommended, regardless of the selected preferred JIT alternative:

- Coordinating vehicle routes and construction activities with local authorities to ensure neighborhood safety and to minimize traffic, dust, and noise impacts;
- Adding traffic controls where construction traffic enters major streets;
 and
- Applying best management practices to suppress dust (see Sections 4.1.10.2 and 5.1.10.2, Mitigation 2, for a specific list of potential dust control measures during construction).

COORDINATION

The Navy and Port have initiated consultation with the SHPO, ACHP, and Oakland Landmarks Preservation Advisory Board to amend the terms of the 1994 MOA for leasing all of FISCO and the eventual disposal of FISCO to the Port.

As described above, these applicable parties have prepared a proposed amended historic mitigation plan, included in Appendix G in Volume II of this EIS/EIR. Coordination with these agencies will be ongoing until the amended historic mitigation plan is finalized.

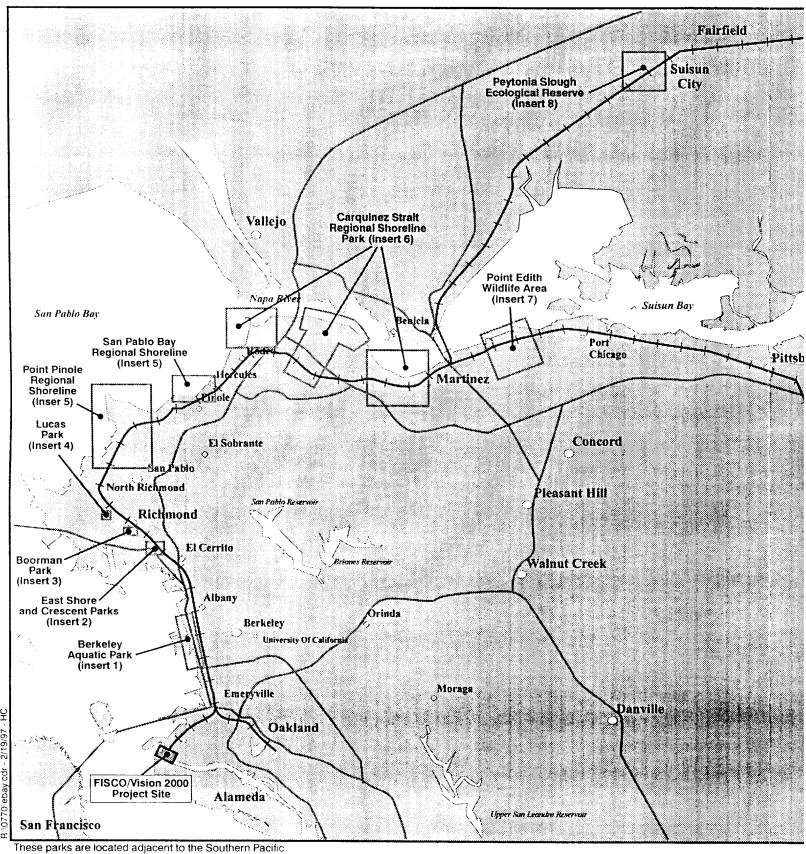
OTHER PARK, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES EVALUATED RELATIVE TO THE REQUIREMENTS OF SECTION 4(F)

The purpose of this discussion is to address section 4(f) requirements relative to other park, recreational facilities, wildlife refuges, and historical properties in the project vicinity. As indicated below, none of the alternatives under consideration result in a section 4(f) use of these other park, recreational, wildlife refuges, or historical resources. The discussion of each resource either documents (1) why the resource is not protected by the provisions in section 4(f) or (2) if it is protected by the provisions of section 4(f), why none of the alternatives under consideration cause a section 4(f) use by (a) permanently incorporating land into the project, (b) by temporarily occupying land that is adverse to the preservationist purposes of section 4(f), or (c) by constructively using land from the resource.

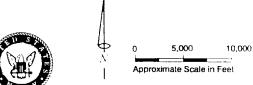
Two regions of influence (ROIs) were used to identify other park, recreational facilities, wildlife refuges, and historic properties potentially affected by the project alternatives. An ROI is a geographic area in which impacts for a particular resource would likely occur. The first ROI, in the vicinity of the JIT, encompasses the area within a 0.8 kilometer (km) (one-half mile) radius of the JIT. The second ROI is the 228.6 meter (m) (750-foot) band along the Southern Pacific mainline tracks (north to the Solano County/Sacramento County border and east to the Contra Costa/San Joaquin County border) that could be affected by increased regional rail service resulting from JIT operations.

Six parksites and two historic properties located in the JIT project vicinity in Oakland are evaluated below and are identified on Figures C-1, C-2, C-3, and C-4: Port View Park, Middle Harbor Park, Ernie Raimondi Field, Willow Mini-park, the Bertha Port and Chester Street Playgrounds, a structure referred to as the north training wall, and the Southern Pacific Railroad Oakland 16th Street Station and 16th Street Tower.

In addition, eight parks, one wildlife area, and one ecological reserve are located near the Southern Pacific mainline tracks north and east of the JIT: Aquatic Park, East Shore Park, Crescent Park, Boorman Park, Lucas Park, Point Pinole Regional Shoreline, San Pablo Bay Regional Park, Carquinez Strait Regional Shoreline Park, Point Edith Wildlife Area, and Peytonia Slough Ecological Reserve. The locations of these resources are depicted on Figures C-8 and C-9; however, as the only potential section 4(f) project issues associated with these sites would be noise and air pollutant emissions, they have not been described in detail below.

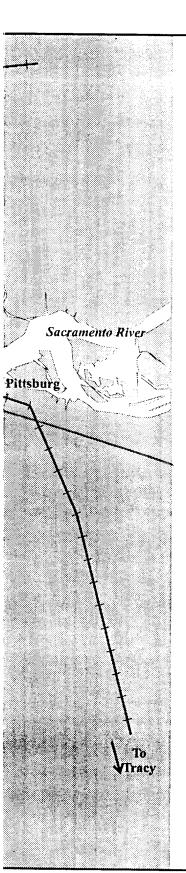


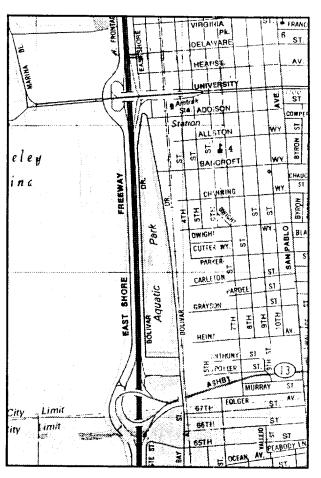
These parks are located adjacent to the Southern Pacific mainline tracks north and east of the project site.



Section 4(f) Resources Alor Pacific Mainline C

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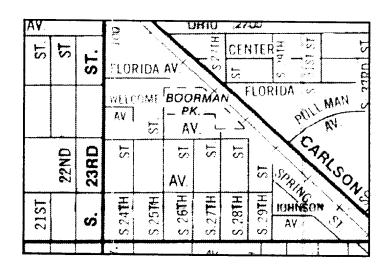
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Insert 2: East Shore and Crescent Parks

Insert 1: Aquatic Park

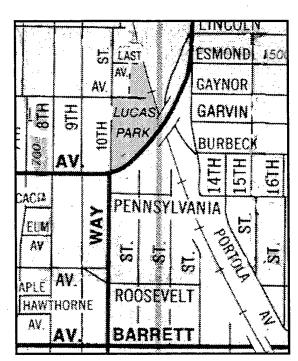


Insert 3: Boorman Park

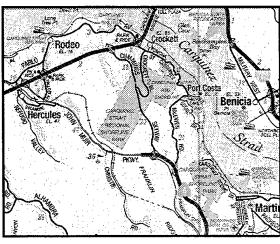
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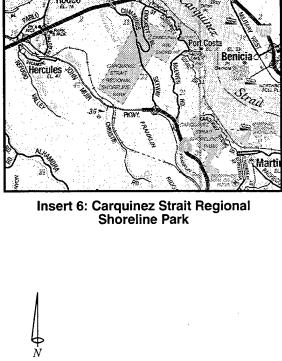
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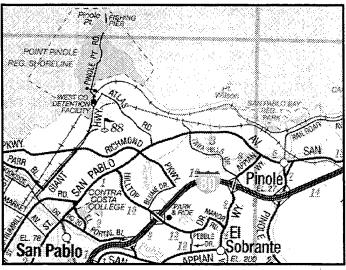




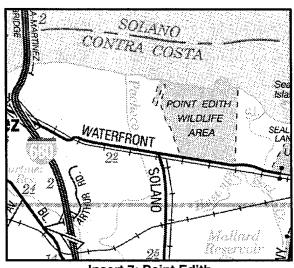
Insert 4: Lucas Park



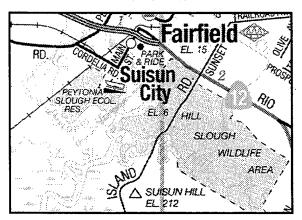




Insert 5: Pinole Point Regional Shoreline and San Pablo Bay Regional Park



Insert 7: Point Edith Wildlife Area



Insert 8: Peytonia Slough **Ecological Reserve**

These parks are located adjacent to the Southern pacific mainline tracks north and east of the project site.

Scale Varies

Section 4(f) Resources Along the Southern Pacific Mainline Corridor

Fleet & Industrial Supply Center Oakland and Port of Oakland

Figure C-9



DESCRIPTION OF OTHER PARKS, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES

Port View Park

Port View Park is approximately 1.6 hectare (ha) (four acres) and is owned by the Port of Oakland. This park is located on the southeast side of 7th Street, near the Seventh Street Marine Container Terminal in West Oakland. Facilities provided at this park include a fishing pier, snack bar and bait shop, restrooms, playground, picnic tables, barbecues, outdoor sculpture, and an enclosed two-story viewing area. Popular activities at this park are picnicking and fishing. Pedestrian and vehicular access to Port View Park is via 7th Street. Middle Harbor Park, located about 2.9 km (1.8 miles) to the southeast, provides the only other public fishing pier and shoreline access to the bay.

Middle Harbor Park

Middle Harbor Park is an approximate 0.4-ha (one-acre) park owned by the Port of Oakland and located along the Oakland Inner Harbor between the Middle Harbor Terminal and the Union Pacific Intermodal Railyard. Facilities at Middle Harbor Park include picnic tables, benches, and a fishing pier. Visitors use this park for eating lunch and fishing. Vehicular and pedestrian access to this park is from Ferro Street via Middle Harbor Road. This access route passes through a heavily industrialized part of the Port area.

Ernie Raimondi Field

Ernie Raimondi Field is owned by the City of Oakland and is approximately 4.05 ha (10 acres). This field is located in West Oakland, west of I-880, and is bordered by 20th Street to the northeast, Campbell Street to the southeast, 18th Street to the southwest, and Wood Street to the northwest. Ernie Raimondi Field has one baseball diamond and two soccer fields. The field is used primarily for baseball/softball games and soccer matches. Street parking is available for vehicles, and pedestrian access is from the surrounding four streets.

During the weekends, it is estimated that between 300 and 400 people use this field. During the weekday, data on usage is derived from records of permitted activities. There are about 50 to 75 permitted users between the hours of 3:30 PM to sunset (Morgan, R., October 28, 1996, personal communication). Ernie Raimondi Field is the only park in the vicinity that provides active recreational fields for sports such as baseball and soccer.

Willow Mini-park

Willow Mini-park is owned by the City of Oakland and is approximately 0.36 ha (0.9 acre). This park is located in West Oakland, west of I-880, and is bordered by Willow Street to the northwest, 13th Street to the southwest, and 14th Street to the northeast. Facilities at this Mini-park include picnic areas (four tables), a half-size basketball court, restrooms, and a tool shed. Recreation activities at this Mini-park include picnicking, basketball, barbecuing, and checkers. Principal

vehicular access is via Willow Street. Approximately 50 or fewer people use the Willow Mini-park daily (Gullet, D., November 5, 1996, personal communication). This park has experienced problems with litter and is viewed as a potential location for illegal drug activities (Morgan, R., November 5, 1996, personal communication). Chester Street Playground, located about 1.04 km (0.65 miles) to the southeast, also provides a half-size basketball court to this neighborhood.

Bertha Port Playground

Bertha Port Playground is owned by the City of Oakland and is approximately 0.1-ha (one-quarter acre). This playground is located in West Oakland, west of I-880, and is bordered by Shorey Street to the east, Wood Street to the south, and Goss Street to the west. Approximately 0.06 ha (0.14 acre) of this site is grass, and the remaining 0.04 ha (0.11 acre) is a playground. There are no athletic facilities at this site. Adults and children use the playground to relax and have lunch. The West Oakland community, estimated at approximately 23 to 30 persons per day (Gullet, D., November 5, 1996, personal communication) uses this playground. Bertha Port Playground has also experienced problems with litter and is viewed as a potential location for illegal drug activities (Morgan, R., November 5, 1996, personal communication).

Chester Street Playground

Chester Street Playground is owned by the City of Oakland and is approximately 0.5 ha (0.13 acre). This playground is located in West Oakland, west of I-880, and is bordered by Chester Street to the southeast between 3rd and 5th Streets. This playground is mostly paved with a half-size basketball court and a small sand playground with play apparatus. There are no on-site restrooms. In mid-October 1996, vandals destroyed the play equipment, and the city has no plans to restore the playground to its previous condition (Morgan, R., November 5, 1996, personal communication. Prior to the October 1996 vandalism incident, it was estimated that about 20 people per day used this facility (Gullet, D., November 5, 1996, personal communication).

Union Pacific Intermodal Railyard North Training Wall

Although located on the Union Pacific Intermodal Railyard, it is presumed that the US Army Corps of Engineers owns the north training wall, a structure that is located along the northern edge of the Inner Harbor Channel. There is also a parallel south training wall along the northern edge of Alameda Island. Together, these two training walls defined the alignments for moles (i.e., bermed railroad tracks extending into the water) constructed at the Alameda and Oakland side of the Oakland Inner Harbor.

The north training wall is visible for about 731.7 m (2,400 feet), extending east from the western edge of the Union Pacific Intermodal Railyard. To the east, this training wall is completely buried under fill. It is presumed that more than 2,134 m (7,000 feet) of the training wall are buried in this manner.

The north training wall was originally seen as an underwater jetty made of stone and pilings and designed to train the channel, forcing it to scour itself and deepen the channel for navigational purposes. Later, as the wall was constructed, it was raised above the high-water mark, converting it into a jetty. The north training wall is backfilled and in places is covered by fill installed by the railroad many years after the wall was constructed.

Access to this historic property is via Ferro Street but it is not accessible by the public. The north training wall is part of the Union Pacific Intermodal Railyard that employs about 55 workers. It is not used for any purpose.

Southern Pacific Railroad Oakland 16th Street Station and 16th Street Tower

The Southern Pacific Railroad Oakland 16th Street Station and Tower is located at the end of 16th Street off Wood Street in West Oakland. The station was constructed in 1911-1912 by the Southern Pacific Railroad and is 83.2 m (273 feet) long overall, 18.3 m (60 feet) high, and contains beaux-arts decorative details. The 16th Street Tower is a three-story reinforced concrete structure. This depot was an active train station from 1912 up until it was damaged in the 1989 Loma Prieta earthquake, when other buildings in the station area were converted for temporary use as a train station. The historic station is vacant and no longer used. Train service is now provided at two new Amtrak stations at Emeryville and Jack London Square.

IMPACTS ON OTHER PARKS, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES

Based on the four alternative JIT footprints, the project would not involve direct or permanent use of any of these other section 4(f) resources. However, during operations and construction, the 4(f) resources may experience other impacts, as described below.

Access

JIT operations would not restrict access to 4(f) resources in the project vicinity. During JIT construction, access to Port View Park and Middle Harbor Park could be affected by increased truck traffic along 7th Street and Middle Harbor Road, respectively. JIT construction under all four project alternatives would also require reconstruction and/or extension of Middle Harbor Road through the FISCO site. However, measures will be taken to keep these two roads open to public through-traffic and therefore not reduce or interfere with public use of these two parksites (see Measures to Minimize Harm). There would be no access impacts at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific rail line because no new construction along these tracks is proposed as part of the JIT, therefore, existing access to these resources would not be disturbed.

Noise

Any of the four project alternatives could result in increased noise levels attributable to increases in truck and rail traffic that in turn, could effect noise-sensitive 4(f) resources. Noise generated by increased vehicle traffic is not expected to have a severe impact on nearby 4(f) resources in the project vicinity. The Cypress Freeway, scheduled for completion sometime in 1997, would reduce existing traffic volumes along many surface streets and would add this freeway segment as a new noise source in the neighborhood. Because of high existing and projected future background traffic volumes anticipated with completion of the Cypress Freeway, future project-induced traffic would not have a severe impact on noise levels at these other 4(f) resources because it would not substantially impair activities at these existing urban resources.

Future noise levels from daily rail operations were estimated for six park sites in the immediate JIT vicinity. Rail operations for each alternative were broken down by train length and train type (i.e., Amtrak, switchers, and freights). A 15-MPH train speed was assumed for all rail operations. The rail operations noise model used for this analysis simulates the history of pass-by events and then computes CNEL levels based on event duration, number of daytime events, number of evening events, and number of nighttime events (details on existing and projected type and number of trains travelling along the Southern Pacific mainline in the Bay Area are documented in Appendix J.3 in Volume II). Calculations were performed with and without train horn noise. The rail operations noise model uses locomotive noise equations from Lotz and Kurzweil (1979) and Remington, Rudd, and Mason (1980). Railcar noise equations used in the model are from Lotz and Kurzweil (1979).

As shown in Table C-2, future projected noise levels at the six nearby 4(f) park sites would be lower than what has been recorded in the past at FISCO. Therefore, it is anticipated that none of the alternatives would generate noise levels that would substantially impair use of parks or playgrounds within 0.8 km (one-half mile) of the JIT. The Union Pacific training wall and Southern Pacific 16th Street Station are not publicly accessible and are not noise-sensitive resources, therefore project noise would not substantially impair the use or integrity of these resources.

There are eight additional parksites, as well as one wildlife area and one ecological reserve north and east of the proposed JIT site, that are located within 229 m (750 feet) of the Southern Pacific mainline tracks (see Figures C-8 and C-9):

- Aquatic Park (Berkeley);
- East Shore Park (Richmond)
- Crescent Park (Richmond);
- Boorman Park (Richmond);
- Lucas Park (Richmond);

Table C-2
Noise Impacts of Rail Operations at Park and Playground Locations within 0.8 km (one-half mile) of the JIT

	CNEL Increment from Rail Operations (dB)					
Park	Maximum Marine/ Maximum Rail	Minimum Marine/ Minimum Rail	Maximum Marine/ Minimum Rail	Reduced Harbor Fill		
Port View Park	53.8	53.3	53.5	53.5		
Middle Harbor Park	54.5	54.1	54.6	55.2		
Ernie Raimondi Field	53.8	53.3	53.4	53.3		
Willow Mini Park	53.9	53.8	53.9	54.0		
Bertha Port Playground	54.5	54.2	54.5	54.7		
Chester Street Playground	55.5	54.0	54.2	55.5		

Note: Analyses assume no routine sounding of train horns in the JIT area.

- Point Pinole Regional Shoreline (Contra Costa County, managed by East Bay Regional Parks District);
- San Pablo Bay Regional Park (Contra Costa County, managed by East Bay Regional Parks District)
- Carquinez Strait Regional Shoreline Park (Contra Costa County, managed by East Bay Regional Parks District)
- Point Edith Wildlife Area (Contra Costa County)
- Peytonia Slough Ecological Reserve (Solano County)

The existing daily number of freight trains travelling north along the mainline segment between the JIT and Richmond is 20. The projected average increase in the number of freight trains travelling along this segment ranges from four under the Minimum Marine/Minimum Rail Alternative to 11 under the Maximum Marine/Maximum Rail, Maximum Marine/Minimum Rail, and Reduced Harbor Fill Alternatives. Twelve freight trains travel north daily in the mainline segment between Richmond and Martinez. The projected average increase in the number of freight trains travelling along this segment ranges from eight under the Minimum Marine/Minimum Rail Alternative to 15 under the Maximum Marine/Maximum Rail, Maximum Marine/Minimum Rail, and Reduced Harbor Fill Alternatives (see Appendix J.3 in Volume II). However, noise caused by increases in train pass-by trips is not anticipated to cause a substantial decrease or impairment in the use or enjoyment of nearby 4(f) resources because of the existing high volume of train traffic along this corridor.

Table C-3 summarizes the results of the rail noise modeling analysis. Compared to conditions without the JIT project, JIT implementation would result in a noise level increase of less than 3 dB. Given the already high ambient noise

environment in the vicinity of the Southern Pacific mainline tracks, this minor increase in noise would not substantially impair the use or enjoyment of these 4(f) resources by noise-sensitive receptors (also see Table 5-12, Section 5.1.11.2, page 5-67 in Volume I).

Table C-3
CNEL Noise Impacts of Rail Operations (dB) to Sensitive Receptors within 229 m (750 feet) of the Southern Pacific Mainline Tracks

No Action		Maximum Marine/ Maximum Rail Alternative		Minimum Marine/ Minimum Rail Alternative		Maximum Marine/ Minimum Rail Alternative		Reduced Harbor Fill Alternative		
Distance (m)	w/o Horn	w/Horn	w/o Horn	w/Horn	W/o Horn	w/Horn	w/o Horn	w/Horn	w/o Horn	w/Horn
229 (750 feet)	65.7	66.0	67.9	68.2	66.3	66.5	68.0	68.2	68.0	68.2

Air Quality

Recent air quality monitoring data near the project site is summarized under Impacts on Section 4(f) Properties, as well as in Table 3-23 in Volume I of the EIS/EIR. Future carbon monoxide emissions would fall within the range of what has been historically recorded in the project area and therefore project emissions would not substantially impair the use or enjoyment of 4(f) properties in the JIT vicinity. Similarly, it is anticipated that there would be no significant carbon monoxide impact on 4(f) properties that are located near the Southern Pacific mainline tracks.

Projected future ozone precursor emissions without the project would be high compared to the BAAQMD's regulatory threshold of 15 tpy (see discussion under Impacts on Section 4(f) Properties) and JIT implementation under all four reuse alternatives would result in further increased emissions. However, these emissions would not substantially impair use or enjoyment of section 4(f) resources, including 4(f) resources in the immediate JIT vicinity and those adjacent to the Southern Pacific mainline tracks, because they are located in areas already affected by degraded air quality and existing rail operations.

All four project alternatives would require demolishing existing structures within the JIT footprint. This demolition activity would be a temporary source of fugitive dust and construction vehicle emissions. However, when properly controlled with best management practices, dust from these activities would not create a localized nuisance nor would it substantially impair the use or enjoyment of nearby 4(f) resources. The closest 4(f) resources to the proposed area of demolition and construction would be Port View Park and Middle Harbor Park. However, both sites are located approximately 366 m (1,200 feet) from the outer edge of the JIT's boundary; therefore, temporary air emissions from demolition activities would not be expected to interfere with use of these parks.

Visual

Demolishing FISCO buildings and multi-story warehouses, seen in the foreground from Port View and Middle Harbor Parks under all four project alternatives, would have a long-term beneficial visual effect. Demolition would create more expansive viewing opportunities to the north and east towards downtown Oakland and the East Bay Hills. Short-term building demolition activities may result in temporary visual impacts; however, given the industrial nature of surrounding property in the project area, any visual intrusion would not interfere substantially with use of these two parks.

The JIT would not have any adverse visual impacts to users of Ernie Raimondi Field, Willow Mini-park, Bertha Port Playground, or the Chester Street Playground. These four parksites are located east of the proposed Cypress Freeway currently under construction. In addition, noise walls are proposed around certain sections of the Cypress Freeway that could further block any existing views of the JIT site. The Union Pacific north training wall and Southern Pacific 16th Street Station are not publicly accessible and are located in highly urbanized industrial areas, therefore there would be no visual effects to these resources. There would also be no visual impacts at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

Wildlife and Vegetation

The 4(f) resources in the JIT project vicinity are located in disturbed, developed areas that support limited wildlife or vegetation resources. Therefore, there would be no impacts to wildlife or vegetation. No severe impacts to wildlife and vegetation would be expected at the 4(f) parks, wildlife area, or ecological reserve located along the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

Water Quality

The other 4(f) resources in the project vicinity are located in disturbed, developed areas that do not contain natural water resources. Therefore, there would be no water quality impacts. No severe water quality impacts would be expected at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

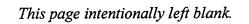
REFERENCES

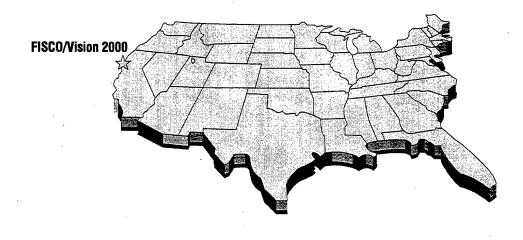
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- Gullet, Dave, Area Manager, Oakland City Parks and Recreation Department. November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.
- Luckhart, Dean, Port of Oakland. November 6, 1996, personal communication with Ed Bondoc, Tetra Tech, Inc.
- Morgan, Roy, Area Administrator, Oakland City Parks and Recreation Department. October 28 and November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.
- Yamashita, A., Park Supervisor 2, Oakland City Parks and Recreation Department. November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.





APPENDIX D
PUBLIC INVOLVEMENT

SCOPING LETTER	D-1
NOTICE OF INTENT	D-13
NOTICE OF PREPARATION	D-15
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US NAVY FACT SHEET	D-19
NEWSPAPER ADVERTISEMENTS	D-21
SCOPING SUMMARY	D-23

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DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO: 5090.1

Ser 185/EP6-978 May 30, 1996

PUBLIC NOTICE

Subject:

Notice of Scoping of Public Concerns regarding a combined Environmental Impact Statement/Environmental Impact Report on the Disposal and Reuse of the Fleet and Industrial Supply Center Oakland, California

The United States Navy in association with the Port of Oakland, California, announces its intent to prepare a joint Environmental Impact Statement /Environmental Impact Report (EIS/EIR) for the proposed disposal and reuse of the Fleet and Industrial Supply Center, Oakland (FISCO), property and structures in Oakland, California. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the base closure process of 1995, directed the Navy to close FISCO. The EIS/EIR will be prepared in accordance with Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500 - 1508), the California Environmental Quality Act (CEQA), and Public Law 102-484 Section 2834, as amended by Public Law 104-106 Section 2867. The Navy will be the EIS lead agency for NEPA documentation and the Port of Oakland will be the EIR lead agency for CEQA documentation.

FISCO is located approximately two miles west of the Oakland central business district, on the eastern shore of San Francisco Bay. It consists of approximately 528 acres and has about 125 structures that support general supply operations, waterfront operations and administration.

The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the FISCO property and subsequent reuses. FISCO is within the planning jurisdiction of the Port of Oakland. The Port of Oakland Vision 2000 Program proposes development of ship, railroad, and truck freight handling facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California and an intermodal port of national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The development of the Port of Oakland Vision 2000 Program is expected to require additional property outside of the FISCO boundary in order to meet the objectives of the Program. This joint EIS/EIR will provide a program level analysis supporting both the Navy NEPA requirements to describe potential environmental impacts associated with the property disposal at FISCO, and the Port of Oakland CEQA requirement to analyze environmental impacts of implementing the Vision 2000 Program.

The EIS/EIR will evaluate a "No Action" Alternative and several reuse alternatives. The "No Action" Alternative would result in the federal government indefinitely retaining ownership of FISCO property. Under the "No Action" Alternative the Navy would continue leasing property to the Port of Oakland under existing 50 year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions. The reuse alternatives are expected to combine the common land use components of a railroad terminal, marine terminals, public waterfront access and marine habitat enhancement. As FISCO is within the Port of Oakland jurisdiction and is designated as a Port Priority use in the April 1996 San Francisco Bay Conservation and Development Commission and the Metropolitan Transportation Commission Seaport Plan Update, alternatives would emphasize port-related activities. Revisions to these alternatives may be developed during the public scoping period. The EIS/EIR will evaluate the potential for environmental impacts to traffic conditions, air quality, biological resources, cultural resources, utilities, and other environmental issues through this scoping process.

Federal, state and local agencies, and interested individuals are encouraged to participate in the scoping process for the EIS/EIR to determine the range of issues and reuse alternatives to be addressed. A public scoping meeting to receive oral and written comments will be held on Thursday June 13, 1996 at 7:00 p.m., at the McClymonds High School auditorium located on 2607 Myrtle Street (near 26th Street) in Oakland, California. In the interest of available time, each speaker will be asked to limit oral comments to five (5) minutes.

In addition, written comments may be submitted by July 1, 1996 to Mr. Gary J. Munekawa, Environmental Planning Branch, Code 185GM, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone 415-244-3022, fax 415-244-3737. For further information regarding the Port of Oakland Vision 2000 Program please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, CA 94607, telephone 510-272-1181, or fax 510-465-3755.

D-2

ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT FOR DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY CENTER OAKLAND (FISCO), CALIFORNIA INFORMATION SHEET

Federal and State Lead Agencies for EIS/EIR Preparation

The United States Navy and the Port of Oakland are preparing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental consequences potentially resulting from the proposed disposal and reuse of the Fleet Industrial and Supply Center, Oakland (FISCO), property and structures in Oakland, California. The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as implemented by the 1995 base closure process, directs the Navy to close FISCO. The Navy is authorized to convey the property from Navy ownership under Public Law 102-484, Section 2834, as amended by Public Law 104-106, Section 2867. Full operational closure is scheduled to occur in September of 1998. The Navy will be the lead agency for documentation pursuant to the National Environmental Policy Act (NEPA) as it applies to impacts potentially resulting from disposal of FISCO property and structures. The Port of Oakland will be the lead agency for documentation pursuant to the California Environmental Quality Act (CEQA) as it applies to impacts potentially resulting from implementation of its Vision 2000 Program.

Scope of EIS/EIR Analysis

The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the FISCO property by the Navy and subsequent reuse of FISCO. FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's Vision 2000 Program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives: (1) a Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A); (2) a Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B); (3) a Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C); and (4) a Reduced Fill Alternative (Alternative D). Although revisions to alternatives may be refined during the public scoping period, these four alternatives are expected to combine the common land use components of a joint intermodal terminal, marine terminals, and public waterfront access and marine habitat enhancement. The No Action Alternative would result in the federal government indefinitely retaining ownership of FISCO property. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, as amended, and supported by the 1995 base closure decisions.

Purpose of This Public Scoping Hearing and the Public Involvement Program

The purpose of this public scoping meeting is to solicit public comments regarding the scope and content of the environmental document prior to its publication as a Draft EIS/EIR. Written comments must be postmarked no later than July 1, 1996, in order to assure their full consideration in the EIS/EIR preparation. This hearing is part of the overall public involvement program established for the EIS/EIR for Disposal and Reuse of FISCO. The Port of Oakland also plans additional meetings regarding the overall Vision 2000 Program.

Schedule for Receiving Further Public Input

Further public input will be solicited following publication of the Draft EIS/EIR in early 1997. Public comment on the Draft EIS/EIR will continue through a 45-day public review period and will also include one more public hearing. Written responses to public comments received on the Draft EIS/EIR will be prepared and included in the final document. If you would like to submit written comments or wish to be added to the Navy mailing list for future information, please forward your comments and/or your name and address to the following contact person and address:

Mr. Gary Munekawa, Code 1852GM Engineering Field Activity West Naval Facilities Engineering Command 900 Commodore Drive San Bruno, CA 94066-5006

Telephone (415) 244-3022 Fax (415) 244-3737

LOCATION, DESCRIPTION, AND HISTORY OF FISCO

Location and Description of the FISCO Site

FISCO is located approximately two miles west of the City of Oakland central business district, on the eastern shoreline of San Francisco Bay. FISCO consists of approximately 528 acres and is bounded by 7th Street on the north, the Southern Pacific West Oakland railyard on the east, the Union Pacific railyard on the south, and Middle Harbor to the west. Existing facilities include about 125 structures that support general supply operations, waterfront operations, and administration.

History

In 1940, the Port of Oakland sold approximately 400 acres of uplands property to the Navy for one dollar. This property sale was recorded with a reversionary clause stating that the deed would revert back to the Port should the Government decide not to use the property for a naval supply depot, or other naval or military purposes. The Navy subsequently purchased additional lands to expand FISCO which do not revert to the Port of Oakland. Currently, approximately 400 acres of FISCO will automatically revert to the Port of Oakland. An additional 140 acres acquired by the Navy will not automatically revert to the Port of Oakland. The Navy is required to close FISCO and must convey these 140 acres from Navy ownership.

The site purchased by the Navy occupies former tidal marshlands that were dredged and filled in 1940. In 1941, the Naval Supply Center Oakland (FISCO's former name) began support operations for World War II. After the war and through the 1980s, FISCO was the main supply facility supporting Department of Defense activities in the Pacific Basin. The mission of FISCO was to provide supply and support services to fleet units and shore activities, as assigned.

Since the mid-1980s, the Port has been engaged in negotiations to acquire surplus Navy property for development and expansion of maritime and transportation-related facilities. Under the provisions of Public Law 102-484 (Section 2834[b]) of the Defense Authorization Act of 1993, the Navy is authorized to lease portions of FISCO to the Port for a period of 50 years. In late 1993, the Port successfully concluded negotiations with the Navy to acquire the first parcel of 220 acres of Navy property to expand intermodal rail facilities and maritime-cargo-related tenant uses. To date, approximately 135 acres of this leased area is in use as general transportation support activities, including warehousing, container depot activities, transloading, and container freight stations. The Port and Navy are currently working towards leasing the remaining FISCO property. Public Law 102-484 was amended to allow the Navy to transfer the 140 acres to the Port which do not automatically revert to the Port.

Development of the Vision 2000 Program is expected to require additional property outside the FISCO boundary to meet the Program's objectives. This non-Navy property may include the following parcels:

- Union Pacific's West Oakland Railyard owned by the Port (78 acres);
- Union Pacific's West Oakland Railyard owned by Union Pacific (9 acres);
- Southern Pacific's West Oakland Railyard (133 acres);
- Don-Gary lease owned by the Port (9 acres);
- Port-owned property rented on a space assignment basis (5 acres); and
- Oakland Army Base (11 26 acres).

VISION 2000 PROGRAM - ALTERNATIVES DEVELOPMENT

The Port of Oakland has investigated several land use configurations that combine different acreages of common land uses. These uses and configurations reflect development opportunities that meet the Port's overriding goals to increase productivity, to improve efficiency of integrated intermodal services, and to provide needed employment and open space opportunities. Land uses included as part of all four Vision 2000 Program alternatives to be analyzed in the EIS/EIR include:

- (a) An intermodal rail terminal (including working tracks, support tracks, and parking) could range between 190 and 340 acres.
- (b) Marine terminals development (including up to five new berths) could range between 122 and 278 acres.
- (c) A public waterfront access and marine habitat enhancement area could range up to 155 acres and would be located in the Middle Harbor Basin.

The attached table and maps are provided to assist you in contributing comments to this public involvement program. They include: (1) A table summarizing the main features of the four Vision 2000 Program alternatives; (2) A site map that identifies individual parcels; (3) A map of the Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A); (4) A map of the Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B); (5) A map of the Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C); and (6) A map of the Reduced Fill Alternative (Alternative D).

ENVIRONMENTAL ISSUES TO BE EVALUATED IN THE EIS/EIR

Although the issues of special concern may change as the EIS/EIR scoping process continues, the following issues have been initially identified as particularly sensitive to future development activities in the Vision 2000/FISCO project area:

- Traffic and circulation impacts associated with railroad, truck, and automobile operations;
- Land use conflicts;
- Socioeconomic impacts regarding changes to local employment, income, population, and housing characteristics, as well as the potential for adverse disproportionate effects on minority and low-income populations;
- Impacts on cultural resources;
- Impacts to sensitive biological habitat along the shoreline;
- Air quality and noise issues related to proposed development;
- Geologic and hydrologic conditions affecting development; and
- Identification and remediation of hazardous materials and hazardous waste.

The EIS/EIR will describe the existing conditions/environmental setting, identify significant and less than significant impacts due to disposal and proposed reuse, and will recommend mitigation measures for significant impacts identified for the following resources or categories of investigation:

Land Use Socioeconomics Aesthetics and Scenic Resources

Aesthetics and Scenic Resources
Public Services

Water Resources

Geology and Soils Biological Resources

Air Quality Noise

Cumulative Effects

Traffic and Transportation

Utilities

Hazardous Materials and Waste

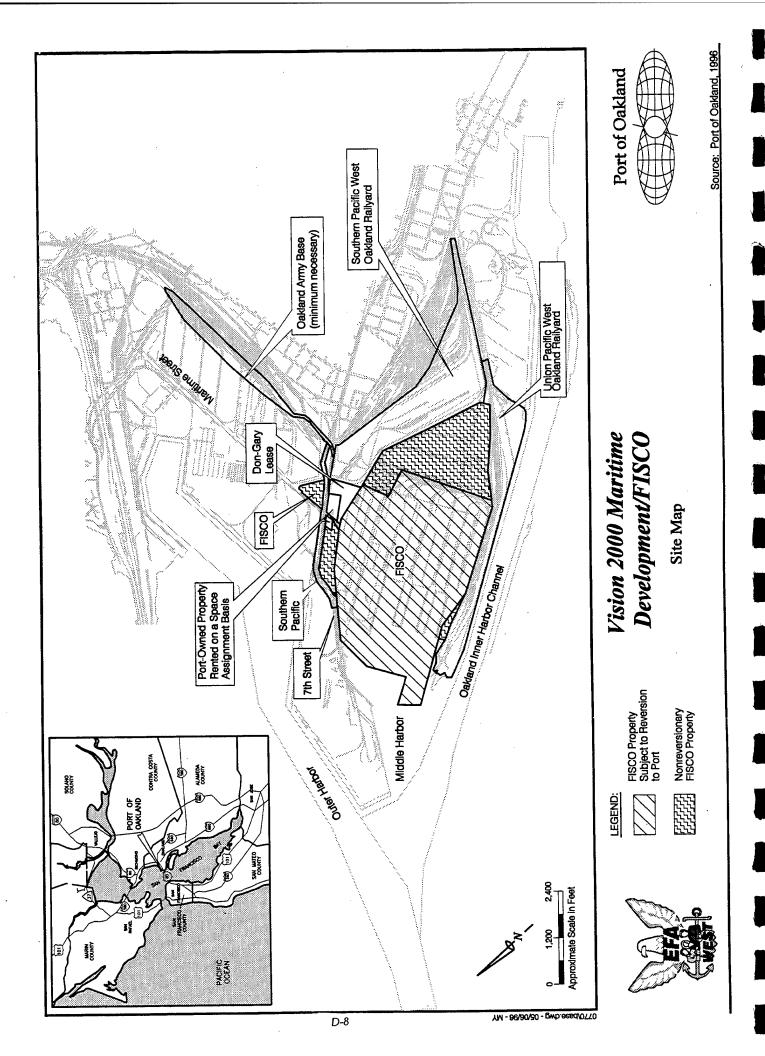
Cultural Resources

For specific information concerning the Vision 2000 Program, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Department, at telephone (510) 272-1181 or fax number (510) 465-3755. Thank you for participating with the Navy and the Port in the environmental planning process.

Alternatives Summary Environmental Impact Statement/Environmental Impact Report for Disposal and Reuse of Fleet Industrial and Supply Center, Oakland

	Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A)	Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B)	Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C)	Reduced Fill Alternative (Alternative D)	
RAILROAD TERMINAL					
Size (acres)	342 +/-	190 +/-	190 +/-	320 +/-	
Rail Service	Southern Pacific & Union Pacific	Burlington Northern- Santa Fe	Burlington Northern- Santa Fe	Southern Pacific & Union Pacific	
Loading Tracks		_		-	
Number of Tracks	7	8	8	7	
Total track feet	46,275	35,655	35,655	48,266	
Number of Car Spots	151	116	116	156	
Support Tracks - Oakland Army Base					
Number of Tracks	24	NA ¹	9 ²	NA	
Total Track Feet	76,700	NA	39,657	NA	
Number of Car Spots	241	NA	TBD	NA	
Acres	26	NA	11	NA	
Parking Slots					
Center-Row	3,823	2,950	2,950	4,316	
Satellite	1,350	702	702	1,215	
Chassis Slots	2,860	900	900	1,500	
MARINE TERMINALS					
Size (acres)	260 +/-	100 +/- (Middle Harbor) 22 +/- (Outer Harbor)	290 +/-	278 +/-	
Location	Inner Harbor	Middle/Outer Harbors	Inner Harbor	Inner Harbor	
Depth (feet)	1.890	2,000/1,400	1,800-2,578	1,726-2,313	
Berths					
Number	Five	Two	Five	Five	
Length (feet)/berth	1,200	1,200	1,200	1,200	
Increase Inner Harbor Channel Width?	no	по	no	yes (new channel width = 730' +/-)	
MITIGATION AREA					
Size (acres)	155	55	155	155	
Harbor Transportation Center					
Relocate HTC offsite?	yes	no	yes	yes	
ONSITE INFRASTRUCTURE				<u> </u>	
Relocate Middle Harbor Road?	yes	no	no	yes	
Grade-Separated Access @ Main Gate?	no	yes	yes	yes	
FILL					
Total Fill Removed (acres)	(-27.82)	(-20.74)	(-27.82)	(-51.96)	
Total Fill Placed (acres)	65.12	56.15	38.17	38.17	
Total Net Fill (acres)	37.30	35.41	10.35	(-13.79)	

Not applicable
 Another support track storage option is to develop all of it on FISCO property.





Port of Oakland

Maximum Marine Terminal/Maximum Rail Terminal Alternative







Vision 2000 Maritime Development/ FISCO Alternatives

Minimum Marine Terminal/Minimum Rail Terminal Alternative





Source: Port of Oakland, 1996



Port of Oakland

Maximum Marine Terminal/Minimum Rail Terminal Alternative



(Alternative C)

Source: Port of Oakland, 1996



Source: Port of Oakland, 1996

Vision 2000 Maritime Development/ FISCO Alternatives Reduced Fill Alternative

(Alternative D)





[Federal Register: May 30, 1996 (Volume 61, Number 105)] [Notices] [Page 27056]

From the Federal Register Online via GPO Access [wais.access.gpo.gov]

[[Page 27056]]

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Intent To Prepare a Joint Environmental Impact Statement/Environmental Impact Report for the Proposed Disposal and Reuse of the Fleet and Industrial Supply Center Oakland, CA

SUMMARY: Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508), the California Environmental Quality Act (CEQA), and Public Law 102-484 Section 2834, as amended by Public Law 104-106 Section 2867, the Department of the Navy, in association with the Port of Oakland, California, announces its intent to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed disposal and reuse of the Fleet and Industrial Supply Center, Oakland (FISCO) property and structures in Oakland, California. The Navy will be the lead agency for NEPA documentation and the Port of Oakland will be the lead agency for CEQA documentation. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the base closure process of 1995, directed the Navy to close FISCO.

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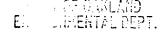
Seaport Plan Update, alternatives would emphasize port-related activities. Revisions to these alternatives may be developed during the public scoping period. The EIS/EIR will evaluate the potential for environmental impacts to traffic conditions, air quality, biological resources, cultural resources, utilities, and other environmental issues identified through this scoping process.

ADDRESSES: Federal, state and local agencies, and interested individuals are invited to participate in the scoping process to determine the range of issues and reuse alternatives to be addressed. A public scoping meeting to receive oral and written comments will be held on Thursday, June 13, 1996, at 7:00 p.m., at the McClymonds High School auditorium, located at 2607 Myrtle Street (near 26th Street) in Oakland, California. In the interest of available time, each speaker will be asked to limit oral comments to five minutes. In addition, written comments may be submitted by July 1, 1996, to Mr. Gary J. Munekawa, Environmental Planning Branch, Code 185GM, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone (415) 244-3022, fax (415) 244-3737. For further information regarding the Port of Oakland Vision 2000 Program, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, California 94604, telephone (510) 272-1181, fax (510) 465-3755. If you need special assistance to participate in this meeting, please contact Mr. Munekawa at least 72 hours prior to the meeting.

Dated May 23, 1996 S.L. Haycock, LCDR, JAGC, USN, Alternate Federal Register Liaison Officer. [FR Doc. 96-13460 Filed 5-29-96; 8:45 am] BILLING CODE 3810-FF-P

Governor's Office of Planning and Research

1400 Tenth Street Sacramento, CA 95814





06 JUNIO A9: 44

DATE:

June 4, 1996

RECEIVED

TO:

Reviewing Agencies

RE:

DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY

SCH# 96062010

Attached for your comment is the Notice of Preparation for the DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY draft Environmental Impact Report (EIR).

Responsible agencies must transmit their concerns and comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

JAMES MCGRATH
PORT OF OAKLAND
530 WATER STREET
OAKLAND, CA 94607

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Kristen Derscheid at (916) 445-0613.

Butto a. Masilata

ANTERO A. RIVASPLATA Chief, State Clearinghouse

Attachments

cc: Lead Agency

SAN FRANCISCO BAY REGION (2) 2101 Webster, Suite 500 Oakland, CA 94612 510/286-1255 Fax 510/286-1380

NOP Distribution List				SCH#
S = sent by lead agency	Fish and Game • Regional Offices	Department of Transportation District Contacts	Business, Transportation, & Housing	Regional Water Quality Control Board
Resources Agency	Richard L. Elliott, Regional Manager Department of Fish and Game	Martin Urkofsky	Sandy Hesnard Caltrans - Division of Aeronautics	NORTH COAST REGION (1) 5550 Skyline Blvd., Suite A
Nadell Gayou Resources Agency	Redding, CA 96001 916/225-2363 Fax 916/225-2381	1656 Union Street Eureka, CA 95501	Sacramento, CA 94274 0001 916/324-1833 Fax 916/327-9093	2anta Rosa, CA 95403 707/576-2220 Fax 707/523-0135
Sacramento, CA 95814 916/327-1722 Fax 916/327-1648	Ryan Broddrick, Regional Manager Department of Fish & Game	01/445-5812 Fax 70//445-5869	Alice Huffaker California Highway Patrol	SAN FRANCISCO BAY REGION 2101 Webster, Suite 500 Oakland, CA 94612
Nicole Leiria Dept. of Boating & Waterways 1629 S Street	Rancho Cordova, CA 95670 916/358-2900 Fax 916/358-2912	California District 2 P.O. Box 494040 Redding, CA 96049-4040	Planning and Analysis Division 2555 Street	510/286-1255 Fax 510/286-1380 CENTRAL COAST REGION (3)
Sacramento, CA 95814 916/445-6281 916/327-7250	Ken Aasen, Acting Regional Manager Department of Fish and Game	Jeff Pulverman	916/657-7222 Fax 916/452-3151	81 Higuera Street, Suite 200 San Luis Obispo, CA 93401-5427 805/549-3147 Fax 805/543-0397
Elizabeth A. Fuchs California Coastal Commission 45 Fremont Street, Suite 1970	Yountville, CA 94599 707/944-5518 Fax 707/944-5563	Marysville, CA 95901	Coltrans - Planning P.O. Box 942814	LOS ANGELES REGION (4) 101 Centre Plaza Drive
San Francisco, CA 94105-2219 415/904-5200 Fax 415/904-5400	George Nokes, Regional Manager Department of Fish and Game	Gary F. Adams	Sacramento, CA 942/4-0001 916/653-9966 Fax 916/653-0001	Monterey Park, CA 91/34-2156 213/266-7556 Fax 213/266-7600
State Coastal Conservancy 1330 Broadway, Suite 1100	1234 East Shaw Avenue Fresno, CA 93710 209/445-6152 Fax 209/445-6607	Caltrans, District 4 P.O. Box 23660 Oakland, CA 94623-0660	State and Consumer Services Robert Sleppy	CENTRAL VALLEY REGION (5 3443 Routier Road, Suite A Sacramento. CA 95827-3098
Oakland, CA 94612 510/286-1015 Fax 510/286-0470	9	\$10/286-5578 Fax \$10/286-5513	Dept. of General Services 400 R Street, Suite 5100	916/255-3000 Fax 916/255-3015
Dept. of Conservation	330 Golden Shore, Swite 50 Long Beach, CA 90802	Caltrans, District 5 P.O. Box 8114	Sacramento, CA 95814 916/324-0214 Fax 916/322-3987	Fresno Branch Office 3614 East Ashlan Avenue Fresno, CA 93726
Sacramento, CA 95814 916/445-8733 Fax 916/324-0948	310/590-5132 Fax 310/590-5192	San Luis Obispo, CA 93403-8114 805/549-3683 Fax 805/549-3077	Office of Local Assistance 501 J Street, Suite 400	209/445-5116 Fax 209/445-5
Gary Brittner	Independent Commissions/Agencies	Marc Birnbaum Catrans, District 6	Sacramento, CA 93814 916/445-3160	Redding Branch Office 415 Knollerest Drive Bedding CA 96003
1416 Ninth Street, Room 1516-2 Sacramento, CA 95814	et, MS-15 'A 95814	P.O. Box 12616 Fresno, CA 93778-2616	California Environmental Protection Agency	nedung, CA 90002 916/224-4845 Fax 916/224-46
916/653-9451 Fax 916/653-0989 Hans Kreutzberg	916/654-3944 Native American Heritage Comm.	209/448-4088 Fax 209/488-4101	Air Resources Board 2020 L. Street	LAHONTAN REGION (6) 2092 Lake Tahoe Boulevard South Lake Tahoe CA 96150
P.O. Box 942896 Sacramento, CA 94296-0001	Sacramento, CA 95814 916/653-4082 Fax 916/657-5390	Caltrans, District 7 120 South Spring Street	Sacramento, CA 95815 916/322-8267 Fax 916/322-5982	916/542-5400 Fax 916/544-2271
916/653-9107 Fax 916/653-9824	Douglas Long Public Utilities Commission	213/897-4429 Fax 213/897-4358	Mark deBie Calif. Waste Management Board	Victorville Branch Office 15428 Civic Drive, Suite 100 Victorville, CA 92392-2359
Dept. of Parks and Recreation P.O. Box 942896 Sacramento. CA 94296-0001	Sol Van Ness Avenue San Francisco, CA 94102 A15,001, East 415,003		8800 Cal Center Drive Sacramento, CA 95826 916/255-4164 Fax 916/255-4071	619/241-6583 Fax 619/241-73 COLORADO RIVER BASIN
916/653-0538 Wendy Halverson-Martin	Betty Silva	San Bernardino, CA 92402 909/383-4808 Fax 909/383-7934	Wayne Hubbard	73720 Fred Waring Drive, #100
Reclamation Board 1020 Ninth Street, Room 240	Sacramento, CA 95825	Robert Ruhnke Caltrans, District 9	Division of Clean Water Programs P.O. Box 944212	Falm Desert, CA 92260-2564 619/346-7491 Fax 619/341-6820
916/327-1531 Fax 916/327-1600	916/5/4-18/2 Fax 916/5/4-1885	Story South Math Speed Bishop, CA 93514 619/872-0689 Fax 619/872-0678	Sacramento, CA 94244-2120 916/227-4408 Fax 916/227-4549	3737 Main Street, Suite 500 Riverside, CA 92501-3339
S.F. Bay Conservation & Dev 1. Comm. 30 Van Ness Avenue, Room 2011 San Francisco, CA 94102	770 Fairmont Avenue, Suite 100 Glendale, CA 91203-1035	Dana Cowell Calirans, District 10	Phil Zentner State Water Resources Control Board Division of Water Quality	714/782-4130 Fax 909/781-6288 SAN DIEGO REGION (9)
415/557-3686 Fax 415/557-3767	Tahoe Regional Planning	209/948-7906 Fax 209/948-7906	P.O. Box 944213 Sacramento, CA 94244-2130 916/657-0912 Fax 916/657-2388	9771 Clairemont Mesa Blvd., Suite B San Diego, CA 921241331 619/467-2952 Fax 619/571-6972
Department of Water Resources 1020 Ninth Street, Third Floor Sacramento, CA 95814	Environmental Review P.O. Box 1038 Zephyr Cove, NV 89448 7021588-4547 Fax 7027588-4527	Lou Salazar Caltrans, District 11	Mike Falkenstein State Water Resouces Control Board	
910/32/-1/22 Fax 910/32/-1040 Health & Welfare	Thomas Ottoman Office of Emergency Services	2829 Juan Street San Diego, CA 92186-5406	Division of Water Rights 901 P Street, 3rd Floor Sacramento, CA 95814	OTHER:
Kim Dinh Dept. of Health COLIN 71. Second DOL 047723	San Francisco, CA 94129 415/666-9300	Aileen Kennedy	Dept. of Toxic Substances Control	
Sacramento, CA 94234-7320 916/323-6111 Fax 916/327-6092	Debby Eddy Delta Protection Commission P.O. Box 530	2501 Pullman 1. 2 2501 Pullman 1. 2 2501 Pullman 1. 2 2705 2714/124-2239 Fax 714/124-2592	CEGA Tracking Center 400 P Street, Fourth Floor P.O. Box 805	OTHER:
	Walnut Grove, CA 95690 916/776-2290 FAX 776-2293	1	916/324-3119 Fax 916/324-1788	

Fresno Branch Office 3614 East Ashlan Avenuc Fresno, CA 93726 209/445-5116 Fax 209/445-5910

Redding Branch Office 415 Knollcrest Drive Redding, CA 96002 916/224-4845 Fax 916/224-4857

Victorville Branch Office 15428 Civic Drive, Suite 100 Victorville, CA 92392-2359 619/241-6583 Fax 619/241-7308

UNITED STATES NAVY

NEWS RELEASE

Engineering Field Activity West
Naval facilities Engineering Command (NAVFAC)
900 Commodore Drive • San Bruno, CA 94066

FOR IMMEDIATE RELEASE Release # 96-04

For more information contact Jeff Young Phone (415) 244-3041 Fax: (415) 244-3010

Navy and Port of Oakland to prepare FISCO Environmental Impact Statement

The United States Navy and the Port of Oakland will prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental impacts of disposal and reuse of the Fleet Industrial and Supply Center, Oakland (FISCO).

The Navy will be the lead agency for National Environmental Policy Act (NEPA) documentation and the Port of Oakland will be the lead agency for California Environmental Quality Act (CEQA) documentation. The Defense Base Closure and Realignment Act of 1990, as implemented by the 1995 base closure process, directs the Navy to close FISCO.

The EIS/EIR will address potential impacts to the environment that may result from the conveyance of the FISCO property by the Navy and subsequent reuse of FISCO by the community.

FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's "Vision 2000" program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. Vision 2000 also includes development of public waterfront access and marine habitat enhancement. Development of the Vision 2000 program is expected to require additional property outside of the FISCO boundary in order to meet its objectives.

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives. The "No Action Alternative," which would result in the federal government indefinitely retaining ownership of FISCO property, will also be evaluated. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions.

Environmental issues addressed in the EIS/EIR are expected to include land use, visual resources, socioeconomics, public services, cultural resources, biological resources, geology and soils, water resources, air quality, noise, traffic and transportation, utilities, and hazardous materials and waste.

The Draft EIS/EIR is expected to be published in early 1997. A public hearing and a 45-day review period will follow the publication and distribution of the Draft EIS/EIR.

A public hearing will be held on Thursday, June 13, 1996, at 7 p.m., at McClymonds High School, 2607 Myrtle Street, in Oakland. The purpose of this hearing is to receive written and verbal comments regarding the potential environmental impacts of disposal and reuse of FISCO. A brief presentation will precede the request for public comment. Navy and Port of Oakland representatives will be available at the hearing to receive comments from the public regarding issues of concern. It is important that federal, state, and local agencies and interested individuals take this opportunity to identify environmental concerns that should be addressed during the preparation of the EIS/EIR.

Agencies and the public are also invited and encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. To be most helpful, scoping comments should clearly describe specific issues or topics which the commentor believes the EIS/EIR should address.

The public is invited to submit written comments by July 1, 1996 to Gary Munekawa, Code 1852, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-2402, (415) 244-3022, Fax (415) 244-3737. For further information regarding the Port of Oakland Vision 2000 Program, contact Loretta Meyer, Port of Oakland, 530 Water Street, Oakland, California 94604-2064, telephone (510) 272-1181, fax (510) 465-3755.

UNITED STATES NAVY

ENGINEERING FIELD ACTIVITY WEST

NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC) 900 COMMODORE DRIVE . SAN BRUNO, CA 94066

For more information contact

Jeff Young

Phone (415) 244-3041

Fax: (415) 244-3010

Site:

Fleet Industrial Supply Center, Oakland (FISCO)

Location:

In the vicinity of the Port of Oakland's Middle Harbor at the

northwest mouth of the Oakland estuary.

Mission:

FISCO (formerly called Naval Supply Center, Oakland), is the principal facility supporting Department of Defense activities in the Pacific Basin and is the Navy's largest west coast supply point. It's primary function is to provide support and supply services to fleet units and shore activities. In general, the facility has been used for storage and supply purposes. Very little manufacturing or

industrial activity has occurred over the years.

Size:

The installation encompasses approximately 529 acres and has about

125 structures.

Opened:

The facility was established in 1941 to support the Navy during World

War II.

Closure:

September 1998

BRAC'd:

BRAC 4, 1995

Status:

Daily operations will cease at the base in September 1998. The installation will then be placed in a caretaker status, with the Navy's Engineering Field Activities West acting as the landlord, until the property is conveyed to the Port of Oakland. Special legislation that

allows the Navy to convey the property directly to the Port of

Oakland. Approximately 134 acres of property is now being leased to the Port.

Cleanup:

The California Environmental Protection Agency is the lead regulatory agency responsible for the cleanup. Several environmental investigations have been conducted between 1977 and the present time, with a total of 99 sites evaluated. Of those sites, 74 showed no potential impact to the environment or public health. The Navy will propose no cleanup action on 12 sites; 13 sites will be addressed in a Record of Decision (ROD). The ROD is expected to be completed by October 1997. Contamination, including Volatile Organic compounds and Total Petroleum hydrocarbons, has occurred in areas where paints, solvents, and hazardous materials were used and/or stored. Preliminary estimates place the cleanup costs at approximately \$42,300,000.

NEWSPAPER ADVERTISEMENT

The following newspaper advertisement announcing the preparation of the Disposal and Reuse of FISCO/Vision 2000 Maritime Development EIS/EIR and the start of the public scoping process was published in the following papers:

San Francisco Chronicle - Sunday, June 2, 1996, and Monday June 3, 1996.

Oakland Tribune - Sunday, June 2, 1996, and Monday June 3, 1996.

Oakland Post - Sunday, June 2, 1996.

PUBLIC NOTICE

4.

The United States Navy and the Port of Cakland announce their intent to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental impacts of disposal and reuse of the Fleet industrial and Supply Center, Oakland (FISCO) in Oakland, CA. The Navy will be the lead agency for National Environmental Policy Act (NEPA) documentation and the Port of Oakland will be the lead agency for California Environmental Quality Act (CEQA) documentation. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the 1995 base closure process, directs the Navy to close FISCO. The Navy has the authority to dispose of FISCO under Public Law 102-484, Section 2834, as emended by Public Law 104-105 base closure process descriptions. by Public Law 104-106, Section 2867, in order to implement the 1995 base closure process decisions

The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the RISCO property by the Navy and subsequent reuse of FISCO. FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's Vision 2000 Program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement. Development of the Vision 2000 Program is also expected to require additional property outside of the FISCO boundary in order to meet the Program's objectives

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives. The No Action Alternative, which would result in the federal government indefinitely retaining ownership of FISCO property, will also be evaluated. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions. Probable environmental issues that will be addressed in the IS/EIR include, but are not limited to, land use, visual resources, socioeconomics, public services, cultural resources, biological resources, geology and soils, water resources, air quality, noise, traffic and transportation, utilities, and hazardous materials and waster. The Draft EIS/EIR is due to be published in early 1997. A public hearing and a 45-day review period will follow the publication and distribution of the Draft EIS/EIR.

PUBLIC SCOPING HEARING

Thursday, June 13, 1996, at 7:00 p.m.

at the following address

McCLYMONDS HIGH SCHOOL **2607 MYRTLE STREET** OAKLAND, CA

The purpose of this hearing is to receive written and verbal comments regarding the potential environmental impacts of the disposal and proposed reuse of FISCO. A brief presentation will precede the request for public comment. Navy and ^{co}ort of Oakland representatives will be available at this hearing to receive comments from the public regarding issues of concern to the public. It is important that federal, state, and local agencies and interested individuals take this opportunity to identify environmental concerns that should be addressed during the preparation of the FISCO. the preparation of the EIS/EIR.

Agencies and the public are also invited and encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. To be most helpful, scoping comments should clearly describe specific issues or topics which the commentor believes the EIS/EIR should address. Written statements must be received at the address below no later than July 1, 1996.

MR. GARY MUNEKAWA, CODE 1852GM **ENGINEERING FIELD ACTIVITY WEST NAVAL FACILITIES ENGINEERING COMMAND** 900 COMMODORE DRIVE SAN BRUNO, CA 94066-5006 Telephone (415) 244-3022 Fax (415) 244-3737

For further information regarding the Vision 2000 Program, contact Ms. Loretta Meyer, Port of Qakland, 530 Water Street, Qakland, California 94607, telephone (510) 272-1181, fax (510) 465-3755.

Table D-1 Scoping Summary

		Scoping Summary
Commentor	Form	Issues
David Farrel,	Letter	Develop alternatives not related to the Vision 2000 Program.
US Environmental	Dated	• Define all parameters (time, geographic area) relevant to the analysis.
Protection	6/26/96	Establish clear statement of purpose and need.
Agency, Region 9		• Include non-FISCO property part of Vision 2000 in setting section.
		Include analysis of cumulative effects.
		Develop "preferred" and "environmentally-preferred" alternatives.
		Develop a preferred alternative that balances environmental quality and
	•	economic opportunity.
		 Describe nearby residential areas and potential impacts to these areas.
		• Describe impact on minority community and low-income population.
		 Present opportunities for the affected communities to provide input.
		 Identify specific potential mitigation measures.
		Discuss the current air quality status, including:
		 air quality conditions, problems, and planning.
		 air quality impacts from proposed action.
		 conformity with State Implementation Plan.
•		- mitigation measures.
		- project alternatives.
		Identify existing traffic, circulation, and parking patterns.
		Identify health, safety, and annoyance issues related to traffic.
•		Analyze reuse in context of relevant transportation changes.
		Identify transit needs related to proposed action.
		• Work with regional partners to identify impacts from reuse.
	•	Analyze potential future uses for the Oakland Army Base, if to be included as part of the Wision 2000 Program.
		included as part of the Vision 2000 Program. Identify existing and projected land use conflicts in West Oakland.
		 Identify existing and projected land use conflicts in West Oakland. Identify dredging requirements associated with each alternative.
		Identify justification for the amount of dredging required.
		Characterize baseline conditions for wetlands, aquatic systems, estuaries,
	•	and other ecological habitats.
		Include a mitigation plan that ensures no net loss of wetlands.
		Comply with the following provisions of the Clean Water Act:
		- there is no practicable alternative.
		 will not contribute to the degradation of waters.
		- will not violate water quality standards, toxic-effluent standards, or
		jeopardize the continued existence of species or their habitats.
		 all steps are taken to minimize adverse impacts.
		 Discuss impacts on listed, protected, and endangered species.
		Identify critical fisheries habitat.
		 Identify hazardous materials storage, disposal, contamination history.
		Discuss pollution prevention, energy conservation, and waste
		minimization.
		 Address potential for adverse health impacts to fishermen.
		Identify all archaeological, prehistoric, and historic resources.
		Assess impacts to aesthetics, visual resources, or Bay access.
		• Identify noise contours associated with existing and proposed activities.
		Define baseline conditions.
		Assess impacts by comparing future conditions to baseline conditions.
	•	Define significance criteria.

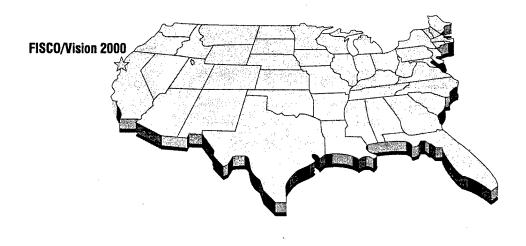
		Scoping Summary
Commentor	Form	Issues
Nicole Gauthier, US Army Corps of Engineers	Letter Dated 6/12/96	 Meet with Sacramento District to discuss reuse of the Oakland Army Base.
John Turner, State of California Department of Fish and Game Joe Browne, State of California Department of Transportation	Letter Dated 6/25/96 Letter Dated 6/13/96	 Identify and remediate hazardous waste. Identify natural resources damages from hazardous materials. Identify impacts on sensitive biological habitat along the shoreline. Identify impacts on sensitive terrestrial resources. Develop mitigation for loss of fish and wildlife resources. Complete traffic study to determine I-880 and I-980 impacts including: trip generation, distribution, and management. average daily traffic, peak hour volumes, and cumulative traffic. highway and non-highway improvements and services mitigations. mitigation financing and scheduling. mitigation implementation and monitoring responsibilities.
Liz Black, Historical Resources Information System	Letter Dated 7/3/96	 Recommend conducting a study to determine if the project area has any unrecorded archaeological sites. Stop work in any area where archaeological resources are discovered.
Marc Roddin, Metropolitan Transportation Commission	Letter Dated 6/4/96	 Consider various channel dredging levels to support marine terminals. Identify assumptions and methodology for traffic circulation analysis. Document transportation model used. Document trip generation, distribution, modal split, and assignment equations in model. Include only fully funded projects in transportation network. Provide data supporting the choice of travel behavior assumptions. Allow for a worst case analysis of traffic impacts. Present traffic information for interstate, arteries, and internal roads. Include volume to capacity ratios and level of service with implementation only of fully funded transportation projects. Discuss unfunded or partly funded transportation projects as project mitigation, with potential funding sources and budgets identified. Use 2010 or 2015 as analysis year. Evaluate reducing demand for single occupant automobile. Evaluate as a partial reuse an overnight truck service complex.
Linda Scourtis, San Francisco Bay Conservation and Development Commission	Letter Dated 7/1/96	 Describe BCDC consistency determination authority. Develop reuse that requires the least possible amount of Bay fill. BCDC supports Alternative D; removes the greatest amount of fill. Indicate fill requirement for marine terminal near Berth 10. Detail new and additional maintenance dredging requirements. Clarify the increased dredging requirement necessary to create Middle Harbor Channel. Follow State Water Resources Control Board and Regional Water Quality Control Board policies on water quality. Maintain/increase bay marsh, mudflat, and water surface area/volume. Protect marshes and mudflats. Protect fish and wildlife habitats. Improve public access to maximum extent possible. Include appropriate mitigation measures.

Scoping Summary		
Commentor	Form	Issues
Brian Wiese, San Francisco Bay Trail, Association of Bay Area Governments	Letter • Dated 6/25/96	Address potential opportunities for shoreline public access and the provision of safe access to and on the site for recreational users and commuting cyclists.
Jean Hart, Alameda County Congestion Management Agency	Letter Dated 6/20/96	Consider participation in the I-880 corridor transportation planning process as a general mitigation measure for transportation impacts. Address all impacts on the metropolitan transportation system. Analyze roadway level of service standards for 2000 and 2005. Satisfy CMA criteria with transportation mitigation measures. Analyze transit level of service standards, including transit funding as a mitigation measure. Consider impact on transportation demand management measures.
Colette Meunier, City of Alameda	Letter Dated 6/28/96	Discuss impact of project on increasing truck traffic on I-880 and I-980. Discuss impact of project on Sacramento/San Jose railroad corridor. Discuss impact of project on Alameda/Oakland Ferry. Discuss impact on shoreline access and Bay Trail. Discuss impact on transportation corridor providing regional access between NAS Alameda and I-880 and I-980. Evaluate suitability of site to accommodate the projected regional need for container port facilities.
Kay Miller, Alameda Reuse Redevelopment	Letter Dated 7/1/96	Discuss impact on air cargo operations at Oakland Airport. Concur with comments made by City of Alameda in June 28 letter. Evaluate visual impact, especially on proposed NAS Alameda reuse. Evaluate cumulative impacts with NAS Alameda reuse plan.
Authority Various Signatories, Secondary Materials Industries Working Group	Letter Dated 6/24/96	recycle unusable portions of the structure. Dispose of, properly, materials containing asbestos or lead-based paint. Do not burn or mulch wood. Deconstruction has beneficial socioeconomic impacts. Examine the cumulative impact of structure disposal on area landfills. Deconstruction can save historically significant portions of buildings or
Jean Matsuura, League of Women Voters of the Bay Area Arthur Feinstein, Golden Gate Audubon Society William Coburn, Oakland Heritage Alliance	-	provide replacement parts for other buildings. Provide an alternative that does not require placing any fill. Present impacts to natural resources, especially wetlands, eelgrass beds, and endangered species, such as least terns and brown pelicans. Consider impacts on California least tern. Consider impacts to eelgrass beds, if any. Present a "no fill" alternative. Include one alternative that minimizes the effect on historic structures. Consider an alternative that would retain all or a portion of the historic resources.

		Scoping Summary
Commentor	Form	Issues
Judith Bloom	Verbal Comment on 6/13/96	Learned of the meeting at 5:00 p.m. on the day of the meeting. Make Vision 2000 materials clearer. Include explanation of alternatives impact on community concerns. Create an electric truck plant to support Port activities. Poor attendance at hearing because public lost faith in Navy promises. Wants to understand how the joint intermodal terminal would work and concluded that such a terminal might even mitigate truck effects.
George Burtt	Verbal Comment on 6/13/96	Port's presentation and public information package is insufficient. Port must communicate with citizens and businesses.
William Chorneau	Verbal Comment on 6/13/96	time to mobilize concerned citizens.
William Chorneau, Coalition for West Oakland Revitalization	Letter Dated 6/27/96	Identify different lead agency; perhaps Oakland Office of Economic Development. Schedule second hearing; first notice of hearing was inadequate. Expand scope to include issues important to entities other than Port. Describe the "no project" alternative in a detailed manner. Include an alternative that does not include the nonreversionary land. Include alternatives that provide more public access and marine habitat enhancement by decreasing the size of rail or marine terminals. Identify mitigation measures for impacts, especially socioeconomic. Present setting, impacts, and mitigation in one section. Setting, as stated in CEQA, should describe the study area "as it exists before the commencement of the project." Present setting from site, local, and regional perspective. Separate impacts related to construction and operation. Demonstrate how thresholds of significance are identified. Show level of significance for each impact before and after mitigation. Cover employment generation, housing, public access and wildlife habitat, transportation, public services, cumulative impacts and growth inducing impacts, air quality, water, noise, visual, and land use. Address the following additional mitigations: additional shoreline access. non-polluting alternatives to internal combustion engines. buffer zone of trees. truck emission standards. adequate on-site truck parking Port funding for a new West Oakland park.

		Scoping Summary
Commentor	Form	Issues
Margaret Gordon	Verbal	 Public outreach process was not adequately conducted.
	Comment	 Hearing conflicted with other community meetings.
	· .	 Proposed a door-to-door outreach program.
•	6/13/96	 No provisions for nonprofits to acquire FISCO property.
		 Port and City formed a partnership without involving citizens.
Harold Logwood	Verbal	Received letter; saw public notices in both Oakland newspapers.
	Comment	Navy made a good effort to inform the public of FISCO disposal.
	on	Applauded the Navy for initiating a collaborative effort.
	6/13/96	Asked that the Navy not be alarmed by the poor attendance but to
	_	continue its efforts to keep the community involved.
Nancy Nadel	Letter	• Include original documents describing land transfer from City to Navy.
	Dated	Because there was no public involvement in amending PL 102-484,
	6/10/96	alternatives that do not include nonreversionary land should be
	and read	developed. These alternatives should attract businesses that: (1) create
	by Ellen	more jobs than proposed Port alternatives; (2) benefit from close
	Parkinson	proximity to the Port; (3) use recycled materials; (4) conserve air, water,
	on (/12/0/	and energy; (5) do not create land fill waste; (6) promote diversity; and
•	6/13/96	 (7) ensure minimal negative environmental impact. Explore the following mitigations: (1) give West Oakland residents first
		• Explore the following mitigations: (1) give West Oakland residents first priority for new jobs; (2) establish a community task force for traffic
		circulation issues; (3) establish emission standards for trucks at the Port
		and have trucks indicate compliance with standards by displaying an
		easily recognizable sticker; (4) provide compulsory training for truck
		drivers on the dangers of diesel emissions; (5) develop a systems of fines
		for trucks not complying with emission standards; (6) plant a tree buffer
		zone between Port and neighborhood; (7) install air monitors; (8)
		provide funding for creation and maintenance of a new West Oakland
		park; (9) provide free truck parking away from West Oakland
		communities; (10) phase-in non diesel alternatives; (11) provide "no
		truck parking" signs in West Oakland neighborhoods and develop an
		enforcement program for mitigations needing enforcement; and (12)
		provide additional shoreline access.
Ellen Parkinson	Verbal	 Supports shoreline park as part of Vision 2000.
	Comment	 Do not forget the youth in the community.
	on	 Proposed a large fishing pier, a nine hole golf course, an Olympic-sized
	6/13/96	swimming pool, a bowling alley, and a skating rink.
		Emphasized need for housing and jobs.
		Concerned about air pollution and street congestion.
		Design a route from Port to interstate not through neighborhoods.
Roger Schmidt	Verbal	• Supports Port and its contributions to improvements in the area.
	Comment	Requested improved access to the 7th Street Fishing Pier. Provided the street of
	on	Presented some of the suggestions developed during the waterfront Description Description
	6/13/96	charette, such as turning Middle Harbor into a small boat harbor;
		creating wetlands; extending the Bay Trail to this area; providing access
		to the area with a light rail system; using fill from dredging operations to expand canals to make breakwaters or create wetlands; and
		employing former navy staff in the recreational areas.
John Geddie	Letter	 Wishes to be included on the mailing list to receive the EIS/EIR.
John Geddie	Dated	w ishes to be included on the maining list to receive the blow bire.
	6/13/96	
	0/ 10/ /0	

Commentor	Form		Issues
Andrea Dawson, Acumen Building	Letter Dated	•	Wishes to be included on the mailing list to receive the EIS/EIR.
Enterprise	6/11/96		



APPENDIX E REGULATORY CONSIDERATIONS

LAND USE	E-1
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GEOLOGY AND SOILS	E-11
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UTILITIES	E-19
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Appendix E Regulatory Considerations

E.1. LAND USE

This section identifies land use plans and regulations that affect land use of the site. This includes the Port of Oakland Business and Policy Plan, the City of Oakland Policy Plan, the BCDC and MTC San Francisco Bay Area Seaport Plan, the Airport Land Use Commission (ALUC) of Alameda County Regulations, and the Coastal Zone Management Act (CZMA) regulations.

E.1.1 Port of Oakland Jurisdiction

Under the Charter of the City of Oakland, the Board of Port Commissioners is vested with the complete and exclusive power and duty, for and on behalf of the City of Oakland within the Port area, to exercise regulatory jurisdiction over land uses and other activities related to the Port of Oakland and to take charge and control of all rights and interests of the City in land and water areas (such as FISCO property). FISCO is within the Port area. Under the City Charter, the Board consists of seven Oakland residents appointed for four-year staggered terms by the Oakland City Council upon nomination by the City Mayor. Under the City Charter, the Board's power is subject to the requirement that it develop and use land in the Port area for a purpose in conformity with the City's General Plan. Most of the Port area is subject to the use restrictions of state legislative trust grants to the City of Oakland, which require uses consistent with statewide commerce, navigation and fisheries (Clark, T., August 14, 1996, personal communication).

Most of the Port area consists of land and water areas owned by the City of Oakland and administered by the Board. Most of the City-owned land in the Port Area is leased by the Board to others, with conditions and requirements governed by the relevant lease. With some exceptions, for City-owned land in the Port area, the Board approves only uses related to aviation, maritime, or other commercial uses of statewide import. If the land is owned by third parties, then the Board only approves uses that do not interfere or are not inconsistent with other aviation,

maritime, or commercial uses of City-owned property in Port Area (Clark, T., August 14, 1996, personal communication).

In 1968, a master development plan, commonly referred to as the Shoreline Plan, was adopted by the Port Commissioners by resolution on November 4, 1968, and was amended in 1969 to incorporate the plan and policies into the City of Oakland Comprehensive Plan (Clark, T., August 14, 1996, personal communication). In general, the Port land uses are consistent with the policies of the City of Oakland.

E.1.2 City of Oakland Policy Plan

The City of Oakland Comprehensive Plan serves as the city's general plan. The city is in the process of updating the Comprehensive Plan. Comprehensive Plan policies help set the direction for land use designations, zoning districts, and development standards. The project site is designated for industrial use (Brady and Associates 1994).

The Oakland Policy Plan, a major component of the city's Comprehensive Plan, is the city council's statement of basic goals and policies, and guides its decisions on specific projects and actions. It also guides the actions and programs of city departments and agencies and assists citizens in participating in the policy-making process. Because the Port proposals for reuse of the project site should be consistent with the Oakland policy plan, the following policies should be considered (City of Oakland 1980):

E.1.2.1 General Considerations

Policy on Land Use Decision-making. The applicable policies state "In deciding on major land use issues, the City will seek to consider the full range of direct and indirect economic, social, physical, environmental, and public service factors involved, giving special attention to possible impacts on lower income persons, the elderly, or members of minority groups." And "In considering those land use questions which mostly affect a particular neighborhood or other area, the City will give substantial weight to the opinions of the local citizens."

Policy on Land Use Relating to the Natural Setting. The applicable policies state "Bay fill should be undertaken only upon clear and convincing evidence that its benefits will outweigh its resulting environmental and other costs." And "In the development of shoreline areas, every reasonable effort should be made to provide attractive public access to the water-edge."

Policy on Land Use Relating to Noise. The applicable policy states "To the extent compatible with noise levels and other environmental factors, the intensity of development at each point in the city should be related to the degree of accessibility there."

Policy on Land Use Relating to Urban Design and Preservation. The applicable policy states "Every effort should be made to preserve those older buildings, other

physical features, sites, and areas which have significant historical, architectural, or other special interest or value."

Policies on Land Use Regulations, Mixture, and Transition. The applicable policies state "The City will employ zoning or other land use regulations to ensure that land uses are compatible with their surroundings and to promote appropriate design and on-site conditions for residents or other users." And "The City will see that the applicable land use regulations are compatible with particular desired functions and character, and where appropriate provide for an orderly transition of use type or density over time." And "In areas which now contain a significant mixture of housing and industries, special steps should be taken to mitigate conflicts between these uses."

E.1.2.2 Commercial and Industrial Uses

General Policies. The applicable policies state "The environmental quality of Oakland's commercial and industrial areas should be protected and in many cases greatly improved. Amenities such as street trees and plazas should be added where appropriate to make these areas more desirable shopping or working environments." And "Commercial and industrial areas should have adequate parking and loading facilities."

Policies on Industrial Areas. The applicable policies state "When appropriate, rehabilitation in the form of structural repairs, modernization, improvement, or conversion of buildings, or other facilities, will be financially aided by the City to improve the environmental quality, efficiency, and market potential of industrial areas." And "If the sites of existing military, transportation, or utility uses within the industrial belt become available for reuse in the future, they should generally be used for transportation or, in suitable locations, manufacturing or wholesaling. Special consideration should be given to possible uses that would involve large numbers of jobs or big contributions to the City's tax base." and "Marine and air terminal capacity should be developed with city, regional, and state-wide benefits." and "Industrial areas should be developed and used in such a manner that they do not harm adjacent residential areas."

E.1.2.3 Civic and Open Space Uses

Policies on Civic and Open Space Uses. The applicable policies state "Efforts should be made to increase the total acreage of public parks and recreation areas within the city limits, exclusive of facilities at schools, colleges, and universities, to at least 10 acres for each 1,000 of Oakland's population."

E.1.3 BCDC/MTC San Francisco Bay Area Seaport Plan

The San Francisco Bay Area Seaport Plan is the product of a cooperative planning effort of the Bay Conservation and Development Commission (BCDC) and the Metropolitan Transportation Commission (MTC). The Seaport Plan constitutes the maritime element of MTC's Regional Transportation Plan and BCDC's San Francisco Bay Plan. The Seaport Plan employs land use designations and

enforceable policies that MTC and BCDC use in their funding and regulatory decisions and that local governments use in their land use and regulatory decisions. Areas determined to be necessary for future port development are designated as port priority use areas and are reserved for port-related and other uses that will not impede development of the sites for port purposes. Port priority use areas include marine terminals and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses, including trucking and railroad yards, freight forwarders, government offices related to the port activity, chandlers, employee parking, and marine services. Within port use areas, marine terminals are identified, and these sites are reserved specifically for cargo handling operations (BCDC 1996).

The Seaport Plan is being revised to include the FISCO site. MTC has prepared an update that suggests designating the FISCO site as a port priority use area, declaring, "If and when not needed by the Navy, should be developed for port and related industrial uses." The proximity of FISCO to Port of Oakland and railyard facilities makes its shoreline a prime candidate for development as a major seaport facility. The emphasis should be on developing sites in the Oakland Inner Harbor. The update evaluated the FISCO site based on the criteria listed in Table E-1 (MTC 1996).

Table E-1
FISCO Seaport Use Evaluation

Rating	Criteria
Excellent	Compatibility with surrounding land uses
Excellent	Land access to freeways and railyards
Fair	Environmental conditions, especially bay fill requirements
Excellent	Availability of a local sponsor to plan, finance, and manage port
Excellent	Good infrastructure, such as warehouses, truck terminals, and railyards
Excellent	Available land for berth development and freight storage and movement
Excellent	Access by a significant portion of modern fully-loaded container vessels

Source: MTC 1996

E.1.4 Airport Land Use Commission of Alameda County Regulations

The proposed project site is outside the ALUC General Referral Area and safety zones (where no structures are permitted in parts of aircraft flight paths) for NAS Alameda. The proposed project location is also outside the NAS Alameda Air Installation Compatible Use Zone (AICUZ) safety zone. However, part of the property is within the AICUZ Accident Potential Zone 2. In this zone, port facilities, rail lines, and trucking would be permitted so long as the height of occupied structures does not exceed four stories and electronic equipment does not

interfere with flight operations. The maritime and transportation uses of the subject site conform with the ALUC Noise Impact Zone for NAS Alameda.

E.1.5 Coastal Zone Management Act Regulations

The federal Coastal Zone Management Act requires that federal actions be consistent to the maximum extent practicable with federally approved state coastal plans. The San Francisco Bay Plan and Bay Area Seaport Plan are the local coastal plans for the San Francisco Bay. The Navy will comply with any applicable requirements of the Coastal Zone Management Act prior to conveyance of FISCO property.

E.2. CULTURAL RESOURCES

The following is a brief summary of relevant plans, policies, and regulations governing cultural resources.

E.2.1 Federal Laws

Pursuant to the regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Navy is the lead federal agency for the disposal of FISCO. Section 106 of NHPA (16 USC 470f), as amended, and its implementing regulations (36 CFR 800), require federal agencies to consider the effects of their actions on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP). It also requires that agencies provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on actions that will directly or indirectly affect National Register or eligible properties. Generally, a project that will have a "substantial adverse change" on a NRHP-eligible property is regarded as having a significant adverse effect on the environment. The criteria for evaluating NRHP eligibility, the relative significance, of cultural resources are found in 36 CFR 60.4.

Additional responsibilities also are placed on the activity commander or commanding officer pursuant to cultural resources requirements of DOD and the Department of the Navy (DOD Directive 4710.1 of 21 June 1984, Archeological and Historic Resources Management; Department of the Navy OPNAVINST 5090.1B, Historic and Archeological Resources Protection, 1 November 1994, Chapter 23).

E.2.2 State Laws

The principal state law relating to the preservation of historical and archeological properties is that of Appendices G and K of CEQA. CEQA mandates that significant effects to important cultural resources be determined during the project planning stage. Under this law, cultural resources include both prehistoric or historical archeological sites, as well as paleontological resources or properties of historic, cultural, or architectural significance to a community or ethnic or social group.

In addition to CEQA, the California Register Act of 1992, codified in Section 5020 and Section 21083 and 21084 of the Public Resources Code, offers specific guidance for the protection of archeological resources. The California Register of Historical Resources is a listing of significant historical resources in the state, similar to the NRHP at the national level. NRHP-listed or eligible properties are automatically listed in the California Register; therefore, the Navy Supply Center, Oakland Historic District, the Oakland Army Base Historic District, and the Southern Pacific West Oakland Shops Historic District are automatically included within the California Register. PRC 21084 of CEQA provides instructions on the treatment of projects that may result in a "substantial adverse change" to historical properties. Generally, a project that will have a "substantial adverse change" on a California Register property is regarded as having the potential for a significant effect on the environment.

VISUAL RESOURCES E.3.

The following is a brief summary of relevant plans, policies, and regulations governing visual and scenic resources.

City of Oakland Comprehensive Plan E.3.1

The City of Oakland Comprehensive Plan contains policies in the Land Use Element and Scenic Corridor Element related to visual resources. The policies relevant to the proposed project are as follows:

E.3.1.1 Land Use Element

Policies on Urban Design and Preservation. Policy 1: The city will pursue a continuing comprehensive process of urban design to seize opportunities as they occur and direct physical changes toward a more efficient, more livable, more beautiful, and more dramatic urban environment.

Policy 2: The city will see that all public facilities ... form in the aggregate a logical visible framework that organizes and stimulates private development.

Policy 4: Every effort should be made to preserve those older buildings, other physical features, sites, and areas that have significant historical, architectural, or other special interest or value.

Policies Relating to the Natural Setting. Policy 1: Urban development wherever it occurs should be related sensitively to the natural setting, with the scale and intensity of development in each case bearing a reasonable relationship to the physical characteristics of the site.

E.3.1.2 Open Space, Conservation, and Recreation Element

The Draft Open Space, Conservation and Recreation element of the Oakland General Plan contains policies related to aesthetics and visual resources. Policy OS-2.5, Urban Park Acquisition Criteria, is to increase the amount of urban parkland, placing a priority on land with visual significance. Policy OS-3.2, Military Base Open Space, calls for designating undeveloped areas with high natural resource or scenic value as Resource Conservation Areas.

E.3.2 BCDC San Francisco Bay Plan

The BCDC Bay Plan contains policies regarding appearance, design, and scenic views, as follows:

Policy 1: To enhance the visual quality of development around the bay and to take maximum advantage of the attractive setting it provides, the shores of the bay should be developed in accordance with the Public Access Design Guidelines and the General Development Guide.

Policy 3: In some areas, a small amount of fill may be allowed if the fill is necessary—and is the minimum absolutely required—to develop the project in accordance with the commission's design recommendations.

Policy 5: To enhance the maritime atmosphere of the Bay Area, ports should be designed, whenever feasible, to permit public access and viewing of port activities by means of (a) view points (e.g., piers, platforms, or towers) and restaurants that would not interfere with port operations and (b) openings between buildings and other site designs that permit views from nearby roads.

Policy 14: Views of the bay from vista points, from roads, and from other areas should be maintained by appropriate arrangements and heights of all developments and landscaping between the view areas and the water.

Policy 15: Vista points should be provided in the general locations indicated in the plan maps. Access to vista points should be provided by walkways, trails, or other appropriate means and would connect to the nearest public thoroughfare where parking or public transportation is available. In some cases, exhibits, museums, or markers would be desirable at vista points to explain the value or importance of the areas being viewed.

The San Francisco Bay Plan Map for the project site shows a West Basin of the Jack London Square Marina adjacent to the Howard Terminal, and states that at Jack London Square continuous public access should be provided along the Estuary to the Lake Merritt Channel.

E.4. BIOLOGICAL RESOURCES

The following is a brief summary of relevant plans, policies, and regulations governing biological resources.

E.4.1 Rivers and Harbors Act of 1899 (Section 10)

The US Army Corps of Engineers regulates impacts to navigable waters, making the excavation from or deposition of material into those waters subject to regulation. The Rivers and Harbors Act of 1899 (Section 10) includes the building of structures in, over, or under these waters. A permit must be obtained from the Corps by the Port of Oakland before activities, such as filling, dredging, or construction, could begin in the waters around the project site.

E.4.2 Clean Water Act

The Clean Water Act was enacted to restore and protect the chemical, physical and biological integrity of the Nation's waters. Clean Water Act Section 401 certification requires that permitted projects comply with state water quality standards. The State establishes water quality standards under Section 301 of the Clean Water Act. State certification is a condition of the 401 certification process. State certification is covered under the Porter-Cologne Act.

Clean Water Act Section 404(B)(1) establishes guidelines for the discharge of dredged or fill material. The guidelines are established individually, or in concert with other activity to prevent adverse impacts to the ecosystem. The US Army Corps of Engineers must provide an opportunity for public comment. The guidelines and policies are developed in conjunction with the Environmental Protection Agency (EPA).

E.4.3 Porter-Cologne Water Quality Control Act

The law established a comprehensive program for regulating state water quality and controlling pollution. The organizations responsible for implementing this law include the State Water Resources Control Board and the regional water quality control boards.

E.4.4 Federal Endangered Species Act

Federal law directs that all federal agencies and departments use their authority to preserve endangered and threatened species under the guidance of the Endangered Species Act (16 USC 1531 et seq.). Federal agencies are required to consult with the US Fish and Wildlife Service (USFWS), or US National Marine Fisheries Service (NMFS) for marine species, prior to undertaking actions that may affect endangered species. The biological opinion is normally issued after the USFWS reviews the draft environmental document. Federal agencies are prohibited from enacting activities that would jeopardize the continued existence of these species.

E.4.5 Fish and Wildlife Coordination Act of 1934 (amended in 1958)

The act provides that wildlife conservation receive equal consideration and be coordinated with other features of water resources development. Any federal agency permitting, licensing, or construction of a project involving impoundment, diversion, or deepening of the waters of any stream or other water body must first consult with the Department of Interior (USFWS) and the Department of Commerce (NMFS), as well as the state wildlife resource agency to prevent losses or damages to resources and develop and improve resources in connection with development projects. Recommendations of the Secretary of the Interior must include impacts of the project on wildlife, measures to mitigate or compensate for these impacts, and a description of project features recommended for wildlife

conservation and development. The 1958 amendments to the law authorized the Secretary of the Interior to provide public fishing areas and accept donations of land and funds.

E.4.6 Coastal Zone Management Act: (1972, amended in 1990)

The Costal Zone Management Act (CZMA) of 1972 and subsequent 1990 amendments (16 U.S.C. 1456 et seq.) act provides for coastal management programs by States. BCDC's coastal management program for the San Francisco Bay was approved in 1977 and is based on the McAteer-Petris Act, the Suisun Marsh Preservation Act of 1977, and the Bay Plan.. Federal agencies make consistency determinations regarding proposed federal activities including permits and licenses. BCDC can concur or object to a permit based on it's policies and laws.

E.4.7 California Endangered Species Act

California provides procedures similar to the federal Endangered Species Act for nonfederal projects under the California Endangered Species Act, California Fish and Game Code (Section 2090 et seq.). For example, the California Department of Fish and Game (CDFG) can adopt a federal biological opinion as a state biological opinion under California Fish and Game Code (Section 2095). Upon disposal of FISCO out of federal ownership, it would be subject to these state regulations.

E.5. WATER RESOURCES

Regulations relevant to water resources include the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region's Water Quality Control Plan for the San Francisco Bay Region (RWQCB 1986), and National Pollutant Discharge Elimination System (NPDES) permit requirements for Stormwater Pollution Prevention Programs (SWPPPs) and point source discharges. The US Army Corps of Engineers regulates disposal of dredged materials, as well as placement of fill. The BCDC also regulates bay fill pursuant to the McAteer-Petris Act. In addition, the City of Oakland participates in National Flood Insurance Program (NFIP) of the Federal Emergency Management Agency (FEMA). Upon reuse, the project site would also need to be consistent with flood protection provisions of the Environmental Hazards Element of the City of Oakland's Comprehensive Plan (City of Oakland 1974).

E.5.1 Water Quality

Jurisdiction over water quality is established by the federal Clean Water Act and the state's Porter-Cologne Water Quality Control Act. The US EPA has delegated primary responsibility for water quality control to the California State Water Resources Control Board (SWRCB). This authority is implemented in the Bay Area by the San Francisco RWQCB. The SWRCB and RWQCB jurisdiction covers implementation of the NPDES permitting requirements for discharges from point (e.g., industrial outfall discharges) and nonpoint (e.g., stormwater runoff) sources of water pollutants. Pursuant to Section 319 of the Clean Water Act, the state has the lead role in identifying and controlling nonpoint sources of

pollution. The RWQCB implements the NPDES program through the issuance of permits for construction and industrial discharges.

The RWQCB also regulates water quality in accordance with state laws and policies identified in the San Francisco Basin Plan. This plan identifies beneficial uses of surface and ground waters, wetlands, and marshes and sets forth water quality objectives to protect the beneficial uses. Beneficial uses for central San Francisco Bay include industrial uses, processing, navigation, contact and noncontact recreation, fishing, commercial uses, wildlife habitat, species preservation, and fisheries habitat (RWQCB 1986, as amended). NPDES permit effluent discharge limitations are structured to achieve regional compliance with Basin Plan beneficial uses.

Urban runoff discharges are regulated under NPDES Permit Regulations for Stormwater Discharges, which are enforced by the RWQCB. Stormwater discharges relevant to the Port of Oakland are regulated in two categories, construction discharges and industrial discharges. The California SWRCB has issued a Statewide General Permit for Industrial Stormwater Discharges that covers non-point discharges from specific industries that apply and qualify for inclusion under the State General Permit. The General Permit does not include all discharges except for construction discharges. To be covered under the State's General Permit, dischargers must submit a Notice of Intent (NOI) to the Board.

At the Port, tenants with activities regulated under the General Permit submit individual NOIs to the SWRCB. The Port itself has not submitted a NOI for its marine terminals operations because the Port does not operate any activities regulated by the General Permit in the marine terminal area. In order to assist its tenants and others in complying with stormwater permit regulations, the Port has organized a working group to prepare a stormwater monitoring program. The Port also provides assistance to its tenants in the preparation of the required SWPPP as well as the application of best management practices (BMPs). Although the Port is developing the SWPPPs and BMPs for the marine terminals, the tenants are responsible for submitting NOIs to the SWRCB. No NOIs have been submitted for uses on the Port's recently leased potion of FISCO; however, NOIs for regulated uses on that property may be submitted in the near future (Herman, D., May 13, 1996, personal communication).

Construction activities at the project site that would result in the cumulative disturbance of over five acres of soil would be subject to measures required by the General Permit for Stormwater Discharges Associated with Construction Activities. Industrial wastewater discharges from point sources would be subject to RWQCB Waste Discharge Requirement permits.

FISCO currently complies with the Statewide General Permit for Industrial Stormwater Discharges through an NOI that covers the entire base as a single industrial site. The permit includes a SWPPP that includes existing and proposed

BMPs. The Navy has prepared a stormwater sampling and analysis program for review by the RWQCB and has been preparing its annual reports since 1992. As part of that program, water is tested twice annually between October and April; periodic inspections also are conducted (Wong, P., May 22, 1996, personal communication).

E.5.2 Fill and Dredging

The US Army Corps of Engineers has jurisdiction over certain structures or work in or affecting navigable waters of the US pursuant to section 10 of the Rivers and Harbors Act of 1899. The US Army Corps of Engineers also regulates discharge of dredge or fill materials pursuant to Section 404 of the Clean Water Act. The BCDC has regulatory authority over non-federal filling operations in the bay and inland within a 100-foot shoreline band from the line of high tide. The RWQCB regulates dredging and dredge material disposal as it relates to water quality. Future maintenance dredging also could be regulated under the Marine Protection, Research, and Sanctuaries Act to the extent that dredge materials are disposed of in the ocean.

US EPA, Region 9, US Army Corps of Engineers, San Francisco District, BCDC, RWQCB, and California SWRCB have been preparing a Long-term Management Strategy (LTMS) for the placement of dredged material in the San Francisco Bay Region. That study is intended to identify long-term solutions to the problem of regional dredge material disposal for a 50-year planning period. It is estimated that an average of 300 million cubic yards per year of dredge materials will require disposal through the planning period. The LTMS includes provisions for disposal, rehandling, and reuse of dredge material in both construction and fill activities. After the LTMS is adopted, the Port may elect to follow LTMS regional dredge disposal approaches or may identify its own dredge disposal site(s).

E.5.3 Flooding

Flood protection for nonfederal lands is administered by FEMA under the NFIP. Participating communities must implement specific flood plain management measures to reduce flood risks to new development. The necessary measures are developed on the basis of Flood Insurance Studies (FIS), which result in the preparation of Flood Insurance Rate Maps (FIRMs). Although FISCO is not under the NFIP, the City of Oakland is a participating community, and the site would be under the NFIP upon conveyance of jurisdiction to the Port. The most recent FIS and associated FIRMs prepared for the city did not include analysis of flood hazards within FISCO (FEMA 1982). The city's environmental hazard's element, flood hazard policies 1 and 3, provide relevant guidance regarding floodplain protection (City of Oakland 1974).

E.6. GEOLOGY AND SOILS

The following is a brief summary of relevant plans, policies, and regulations governing geology and soils.

E.6.1 State of California

The California Code of Regulations (CCR), Title 24, Part 2, also known as the California Building Code (CBC), contains the enforceable state building standards. These regulations are promulgated by the Division of the State Architect/Structural Safety Section, and the Office of Statewide Health Planning and Development. The California Building Standards Commission is responsible for coordinating all building standards in California. The City of Oakland Department of Public Works is responsible for enforcing these standards within the city.

The project site is located within seismic Zone 4, the highest seismic classification defined in the CBC. CBC seismic standards represent minimum requirements for new construction within Zone 4, a region in which the effective peak ground acceleration assumed in design calculations is 0.5g. In areas in which effective peak ground accelerations are likely to be greater than 0.5g, the minimum CBC requirements may not be adequate. The CBC defines two alternative methods for calculating design seismic forces—a static procedure and a dynamic procedure. The dynamic procedure allows for a site-specific determination of the structural design requirements, based on geologic, tectonic, seismologic, and soil characteristics associated with the site and is required for certain classes of structures.

The CBC (Section 1629A.2) requires that every structure have sufficient ductility and strength to undergo the displacement caused by the "upper bound earthquake" motion without collapse. The upper bound earthquake ground motion is defined as the motion having a 10 percent probability of being exceeded in a 100-year period or maximum level of motion that may ever be expected at the building site within the known geological framework.

Under the Alquist-Priolo Earthquake Fault Zoning Act, the California Division of Mines and Geology has delineated seismic zones that are deemed to be "sufficiently active and well-defined as to constitute a potential hazard to structures from surface faulting or fault creep." The state geologist is also required to review continually new geologic and seismic data and to revise the earthquake fault zones or to delineate new zones based on new information. No active faults have been identified within the property boundaries of the project site. The nearest delineated active fault zone is the Hayward Fault, located approximately five miles east of the project site. The delineated San Andreas Fault is approximately 15 miles west of the site. The delineated Calaveras Fault is located approximately 15 miles to the east.

E.6.2 City of Oakland

The Health and Safety Element of the City of Oakland General Plan (1991) requires that a soils and geologic report be submitted to the Department of Public Works prior to issue of all building permits to evaluate the potential for lateral spreading, liquefaction, differential settlement, and other types of ground failures.

It requires all structures of three or more stories to be supported on pile foundations that penetrate Bay Mud deposits and to be anchored in firm noncompressible materials, unless geotechnical findings indicate a more appropriate design. It also provides for the identification and evaluation of existing structural hazards and abatement of those hazards to acceptable levels of risk.

E.6.3 Port of Oakland

The Port of Oakland has adopted wharf design criteria to be used in design, construction, reconstruction, or repair of all existing and future wharf structures, except in the event that current engineering practice requires adjustments or modification of the wharf design criteria (Port Wharf Design Guidelines Ordinance No. 2972). The General Engineering Design Criteria include the following geotechnical standards:

- 1(d) A sufficiently deep cutoff wall or other means shall be provided along the back of the wharf to prevent erosion of yard materials by tidal, wave, or other action under the wharf.
- 1(e) The slope beneath the wharf shall be protected from erosion by placement of riprap or by other means, as recommended by a geotechnical consultant.
- 1(f) The dike or cut slope beneath the wharf shall be designed to withstand the same seismic forces as the wharf structure. It shall contain the soil behind the slope under the design earthquake loading.
- 1(g) Flexible connections shall be provided where utilities pass from the yard through the cutoff wall or other rigid structure at the back of the wharf.
- 2(c) The seismic loads shall be based on site response spectral curves developed by geotechnical consultants taking into account the effects of earthquakes on the two major faults in the vicinity of the wharf structure (San Andreas and Hayward) as well as other faults in the region.

E.6.4 Bay Conservation and Development Commission

The San Francisco Bay Plan (BCDC 1992) includes policies regarding the placement of fill for earthquake safety. Policy 1 states that the commission has appointed the Engineering Criteria Review Board, consisting of geologists, civil engineers specializing in soils engineering, structural engineers, and architects competent to and adequately empowered to (a) establish and revise safety criteria for bay fills and structures thereon; (b) review all except minor projects for the adequacy of their specific safety provisions and make recommendations concerning these provisions; (c) prescribe an inspection system to assure placement of fill according to approved designs; and (d) gather and make available performance data developed from specific projects. These activities would complement the functions of local building departments and local planning departments, none of which are presently staffed to provide soils inspections.

E.7. TRAFFIC AND CIRCULATION

The following is a brief summary of relevant plans, policies, and regulations governing traffic and circulation.

E.7.1 US Department of Transportation

The Federal Highway Administration is the agency of the Department of Transportation responsible for the federally-funded roadway system, including the interstate highway network and portions of the primary state highway network. Federal Highway Administration funding is provided through the Intermodal Surface Transportation Efficiency Act of 1991 for which this project (Vision 2000) qualifies. This act's legislation can be used to fund local transportation improvement projects, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, and transit system upgrades.

E.7.2 California Department of Transportation

Caltrans is responsible for the planning, design, construction, and maintenance of all state highways. Caltrans jurisdictional interest would extend to improvements to roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements would be subject to review by Caltrans staff and the California Transportation Commission.

E.7.3 Metropolitan Transportation Commission

The Metropolitan Transportation Commission is the regional organization responsible for prioritizing transportation projects in a Regional Transportation Improvement Program for federal and state funding. The process is based on evaluating each project for need, feasibility, and adherence to the Intermodal Surface Transportation Efficiency Act policies and congestion management program. The congestion management program requires that each jurisdiction identify existing and future transportation facilities that will operate below an acceptable service level and provide mitigation where future growth degrades that service level.

E.7.4 Alameda County Congestion Management Agency

The Alameda County Congestion Management Agency (CMA) is responsible for ensuring local government conformance with the congestion management plan, a seven-year program aimed at reducing traffic congestion. The CMA has review responsibility for proposed development projects that are expected to generate 100 more PM peak hour trips than otherwise would occur. The CMA reviews the adequacy of CEQA analyses and measures proposed to mitigate impacts. The CMA maintains a county-wide transportation model and has approval authority for the use of any local or subarea transportation models.

E.7.5 City of Oakland

The City has designated certain container truck routes that allow carriage of axle weights higher than typically allowed on other public streets without special

permits. Permitted container routes include 7th Street, Middle Harbor Road, Maritime Street and Third Street east of Middle Harbor Road.

The City of Oakland has placed a heavy truck (over 4.5 tons) restriction on I-580 between Grand Avenue and 106th Avenue. Truck traffic to and from the project site must use alternative roadways.

E.8. AIR QUALITY

The following is a brief summary of relevant plans, policies, and regulations governing air quality.

E.8.1 Federal Requirements

The federal Clean Air Act requires each state to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce federal air quality standards throughout the state. These plans must be submitted to and approved by EPA. In California, the state implementation plan consists of separate elements for different regions of the state. SIP elements are generally developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated.

Local councils of governments and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP. In the San Francisco Bay region, SIP document preparation has been a coordinated effort involving three regional agencies: the Bay Area Air Quality Management District (BAAQMD), the Association of Bay Area Governments (ABAG), and the Metropolitan Transportation Commission (MTC).

The federal Clean Air Act imposes deadlines for achieving the federal ambient air quality standards. The San Francisco Bay Area was recently reclassified from a moderate nonattainment area to an attainment/maintenance area for the federal ozone standard. The urbanized portions of the San Francisco Bay Area are presently categorized as moderate nonattainment areas for the federal carbon monoxide standards. The Bay Area is currently not classified for the federal PM₁₀ standard.

The California Air Resources Board (CARB) believes that monitoring data demonstrate that the San Francisco Bay Area has achieved the federal carbon monoxide and PM₁₀ standards, and has requested that redesignation to attainment status for both pollutants. Final EPA action on the carbon monoxide and PM₁₀ redesignation requests is expected to occur within the next year.

E.8.2 State Requirements

The California Clean Air Act of 1988 requires air pollution control districts and air quality management districts to develop air quality management plans for meeting state ambient air quality standards for ozone, carbon monoxide, sulfur

dioxide and nitrogen dioxide. CARB is responsible for developing a plan for meeting state PM_{10} standards.

The California Clean Air Act does not set specific deadlines for achieving state air quality standards. Instead, attainment is required "as expeditiously as practicable", with various emission control program requirements based on the attainment status for ozone and carbon monoxide standards. The entire San Francisco Bay Area is classified as a moderate nonattainment area for the state ozone standard. The Bay Area is also classified as a nonattainment area for the state PM₁₀ standard. The entire San Francisco Bay Area is currently classified as an attainment area for the state carbon monoxide standards.

Air pollution control programs were established in California prior to the enactment of federal requirements. Responsibility for air quality management programs in California is divided between CARB as the primary state air quality management agency and air pollution control districts as the primary local air quality management agencies. Federal Clean Air Act legislation in the 1970s resulted in a gradual merger of local and federal air quality programs, particularly industrial source air quality permit programs.

E.8.3 Air Quality Permits

Many types of industrial and commercial facilities require air quality permits for their equipment and operations. The BAAQMD has the primary air quality permit authority throughout the San Francisco Bay Area. Permit authority is derived from a combination of state and federal legislation, and can be categorized into construction or installation authorizations for individual pieces of equipment and permits for continued operation of equipment and facilities.

In general, federally required air quality permit programs have been integrated into the pre-existing state and local permit program. This results in a two-step permit process for new emission sources: an initial authority to construct (ATC) permit and a subsequent permit to operate (PTO).

E.8.4 Federal Clean Air Act Conformity Process

Section 176(c) of the Clean Air Act requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the Clean Air Act and with federally enforceable air quality management plans. EPA has promulgated separate rules that establish conformity analysis procedures for transportation-related actions and for other (general) federal agency actions. Transportation conformity requirements apply to actions funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). General conformity requirements are potentially applicable to most other federal agency actions, but apply only to those aspects of an action that involve on-going federal agency responsibility and control over direct or indirect sources of air pollutant emissions. The conformity review process is intended to ensure that federal agency actions:

- Will not cause or contribute to new violations of any federal ambient air quality standards.
- Will not increase the frequency or severity of any existing violations of federal ambient air quality standards, and
- Will not delay the timely attainment of federal ambient air quality standards.

The transportation conformity rule applies primarily to highway construction projects and mass transit system projects. Harbor and railroad development projects generally are not subject to transportation conformity requirements (Tannehill, September 25, 1996, personal communication).

The EPA general conformity rule applies to most federal actions occurring in nonattainment or maintenance areas (such as the San Francisco Bay area) when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The federal nonattainment and maintenance pollutants subject to conformity analyses in the San Francisco Bay area include ozone precursors (reactive organic compounds and nitrogen oxides) and carbon monoxide. Applicable threshold levels for federal actions in the San Francisco Bay Area are 100 tons per year of reactive organic compounds, 100 tons per year of nitrogen oxides, and 100 tons per year of carbon monoxide.

Several categories of federal agency actions are exempted from the EPA general conformity rule because they are presumed to have federally controllable emissions below the threshold level. Transfers of ownership, interests, and titles in land, facilities, real property, or personal property to other public agencies or to private parties are among the actions exempted from conformity determination requirements. Lease arrangements, however, may be subject to the requirements of the conformity rule if the terms of the lease allow federal agencies to control the leasee's emission-generating activities.

E.9. NOISE

Various federal, state, and local agencies have developed guidelines for evaluating land use compatibility under different noise level ranges.

E.9.1 Federal Agency Guidelines

The federal Noise Control Act of 1972 (P. L. 92-574) established a requirement that all federal agencies must comply with applicable federal, state, interstate, and local noise control regulations. Federal agencies also were directed to administer their programs in a manner that promotes an environment free from noise that jeopardizes public health or welfare.

The Department of Defense evaluates the acceptability of noise levels at military installations according to three noise level zones—community noise equivalent

(CNEL) levels below 65 dB (Zone 1), CNEL levels of 65-75 dB (Zone 2), and CNEL levels above 75 dB (Zone 3). All land uses are considered compatible with Zone 1 noise levels. Industrial, office, and commercial uses are generally compatible with Zone 2 noise levels. Educational and residential land uses are not compatible with Zone 2 noise levels unless special acoustic treatments and designs are used to ensure acceptable interior noise levels. Residential and educational land uses are not compatible with Zone 3 noise levels. Industrial and manufacturing land uses may be acceptable in Zone 3 areas if special building designs and other measures are implemented.

A 1985 Air Installation Compatible Use Zone study update for NAS Alameda, located across the Oakland Inner Harbor from FISCO, identified areas of the FISCO, Port of Oakland, and Southern Pacific railyard properties as falling within Zone 2 (US Navy 1985). A small area in the southwest portion of the FISCO site fell within Zone 3 (US Navy 1985). Portions of Treasure Island, Yerba Buena Island, and the City of Oakland also fell within these boundaries. These zones were derived using 1983 NAS Alameda aircraft operations data. Since aircraft types and the number of operations have changed since that time, these zones may no longer be accurate. All military aircraft ceased operations at NAS Alameda in mid-1996; however, this base is still used periodically by commercial air craft.

E.9.2 State Agency Guidelines

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures. These standards require that hotels, motels, and multiple-unit dwellings be constructed so that outdoor noise sources will not cause interior noise levels to exceed an annual average CNEL value of 45 decibels with the windows closed.

The California Department of Health Services (1987) has published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that categorizes various outdoor CNEL ranges into as many as four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use.

The state noise element guidelines chart identifies normally acceptable noise levels for low density residential uses as CNEL values below 60 decibels. The normally acceptable range for high density residential uses is identified as CNEL values below 65 decibels. For educational and medical facilities, CNEL values of 60 to 70 decibels are identified as conditionally acceptable. For office and commercial land uses, CNEL values of 67.5 to 77.5 decibels are categorized as conditionally acceptable.

E.9.3 Local Noise Policies

The noise element of the Oakland Comprehensive Plan contains a general policy to prevent or reduce exposure to excessive or annoying noise. Policy recommendations in the noise element urge a serious consideration of noise impacts in the planning and design of new or expanded roadways, with incorporation of noise mitigation, such as depressed roadway and noise barriers, where feasible. Other transportation policy recommendations include the use of roadway designs that discourage through traffic on local streets and neighborhood designs that encourage pedestrian and bicycle use. Land use policy recommendations include using buffer areas (including off-street parking, greenbelts, or general commercial areas) to protect residential areas from activities that produce excessive noise, odors, or traffic.

In June 1996 the City of Oakland adopted new noise ordinance provisions for the Oakland Municipal Code and Oakland Planning Code (Ordinances 11893, 11894, and 11895). Appendix K provides a simplified summary of noise limits contained in various sections of the Oakland noise ordinances. Different sections of the ordinances use different noise measurement units as formal limits. Some sections reference maximum allowable noise levels while others specify a pattern of noise level exceedance limits. Other sections set time limits for the operation of specified noise sources without specifying numerical noise limits. To the extent possible, the various provisions have been converted into equivalent average noise level values that are more easily summarized and compared within Figure K-1 in Appendix K.

E.10. UTILITIES

Navy and DOD regulations outlined in the Navy's Environmental and Natural Resource Program Manual govern the operation of ships at sea.

E.10.1 Water Distribution System

The Safe Drinking Water Act outlines sampling for lead and copper in drinking water. The Navy's Environmental and Natural Resource Program Manual identifies requirements and responsibilities for the protection of drinking water supplies at Naval installations.

E.10.2 Sanitary Sewer System

NPDES permit requirements apply to the discharge of wastewater to the sanitary sewer.

E.10.3 Stormwater System

The stormwater system operates under a NPDES, Statewide General Industrial Storm Water Discharge Permit. Specifics of the stormwater monitoring program are discussed in Section 3.7 (Water Resources). Stormwater is not treated prior to discharge to San Francisco Bay.

E.10.4 Solid Waste Management

The Solid Waste Disposal Act of 1965, as amended by the Resource Conservation and Recovery Act (RCRA) in 1976, requires that federal facilities comply with all federal, state, interstate and local requirements regarding the disposal and management of solid waste. RCRA establishes public safety and health standards for the disposal of solid waste, including requirements for landfill liners and leachate collection and treatment. RCRA and the Military Construction Codification Act of 1982 also provide for various means of recovering value from solid waste. Wastes may be recycled, reclaimed, used as a fuel supplement, or sold for profit.

California AB 939 requires California counties to divert 25 percent of their solid waste from landfills by 1995 and 50 percent by 2000. California Senate Bill (SB) 1223 establishes state programs designed to increase recycling and to encourage the development of commercial markets for recyclable materials. In general, the state places the burden of action and responsibility on the county to meet the state requirements.

Coast Guard regulations require privately-owned vessels to dispose of garbage three miles out to sea or contain it while in port. No plastics may be dumped at sea or in port.

E.11. HAZARDOUS MATERIALS AND WASTE

The following is a brief discussion of the major federal laws and regulations that apply to hazardous materials and waste at the project site.

E.11.1 Resource Conservation and Recovery Act

In response to the need to more closely regulate the ongoing handling, storage, transportation, and disposal of hazardous wastes, the US Congress passed RCRA in 1976. RCRA presents the federal regulations for the operation of hazardous waste storage, treatment, and disposal sites. Prior to RCRA, the state of California had passed the Hazardous Waste Control Law (HWCL) in 1972. This law provides regulations that equal or exceed the federal standards set by RCRA for hazardous waste management. The state of California was given "interim authorization" to implement RCRA under through enforcement of the HWCL. Final authorization for the state to implement RCRA was given in 1993. The responsible agency for enforcement of RCRA and HWCL is Cal EPA's Department Of Toxic Substance Control (DTSC).

E.11.2 Comprehensive Environmental Response, Compensation, and Liability Act

Originally passed in 1980, CERCLA created national policies and procedures to identify and remediate sites previously contaminated by the release of hazardous substances. CERCLA formalized the process for identification of sites and the prioritization for the cleanup of sites through the National Contingency Plan (NCP). The NCP contains criteria for the evaluation of sites that provide the basis for the preliminary assessment and site inspection. The evaluation that results in a

priority ranking of the site that determines whether it should be placed on the National Priority List (NPL). Facilities placed on the NPL are commonly referred to as "Superfund" sites. As noted previously, FISCO is not on the NPL.

E.11.3 Community Environmental Response Facilitation Act

Congress amended CERCLA in 1992 through the passage of CERFA. The purpose of CERFA is to expedite the identification of uncontaminated real property, within closing federal facilities, which offers the greatest opportunity for reuse and redevelopment. Uncontaminated or "CERFA-eligible" property is defined as any real property on which no hazardous substances and no petroleum products were stored for one year or more, known to have been released, or disposed. CERFA also provided clarification as to when "all remedial action has been taken." CERFA defined that all remedial action has been taken if construction and installation of an approved remedial design has been completed and the remedy has been demonstrated to the Administrator to be operating properly and successfully. The carrying out of long-term pumping and treating, or operation and maintenance, after the remedy has been demonstrated to the administrator to be operating properly and successfully does not preclude the transfer of the property.

Identification of uncontaminated properties at FISCO is the responsibility of the Navy. EPA is the regulatory authority for enforcement of CERCLA, including the CERFA amendments. However, the EPA has joined with Cal EPA in the implementation of CERFA for DOD facilities in California. Cal EPA serves as the lead agency for closures of military bases, including FISCO, not listed in the NPL. Cal EPA generally follows EPA guidance for CERCLA sites.

For properties that cannot qualify as "CERFA-eligible," the CERFA law specifies that the deed for the transfer of subject property shall include a covenant warranting that all remediation necessary to protect human health and the environment with respect to any hazardous substance remaining on the property has been taken prior to the date of transfer and that any response action or corrective action found to be necessary after the date of transfer shall be conducted by the United States.

Properties that contain or potentially contain contamination cannot be transferred prior to environmental remediation. However, the DOD has established a policy for lease of these properties. The DOD with regulatory participation can develop a site-specific or supplemental environmental baseline survey, or in specific cases use the base-wide EBS and a finding of suitability to lease (FOSL) or finding of suitability to transfer (FOST) for the property. The FOSL may include specific land use restrictions to protect human health and the environment, and to ensure government access for final investigations and remediation. A FOST may be issued only for properties on which all remedial actions necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken (pursuant to CERCLA 120(h)(3)).

E.11.4 Aboveground and Underground Storage Tank Regulations

ASTs and USTs are subject to regulation by federal, state, and local agencies. Public agencies involved in the implementation and enforcement of AST and UST regulations are:

- EPA, Region IX, San Francisco, California
- State Water Resources Control Board, Sacramento, California
- California Air Resources Board, Sacramento, California
- Regional Water Quality Control Board, Oakland, California
- Bay Area Air Quality Management District, San Francisco, California
- Alameda County Environmental Health Dept., Oakland, California
- Oakland Fire Department

California has a cooperative agreement with EPA (1991) to implement AST and UST regulations through the SWRCB. California in turn delegates authority to county and city agencies for local implementation and enforcement of AST and UST regulations. The ACEHD are the local agencies responsible for the implementation and enforcement of AST, UST and hazardous materials regulations. The BAAQMD is responsible for the implementation and enforcement of air quality regulations in Alameda County. The OFD is responsible for enforcing the UFC as they apply to hazardous materials and tanks.

E.11.4.1 Federal Regulations

EPA issued final regulations in 40 CFR Parts 280 and 281, regarding USTs containing petroleum products and hazardous substances on September 23, 1988. The specific goals of the federal UST regulations are to: (1) prevent and detect UST leaks and spills; (2) correct environmental impacts resulting from UST leaks and spills; (3) assure UST owners and operators can pay for UST contamination; and (4) assure each state has an UST regulatory program that is at least as stringent as the federal regulations. The regulations that may apply to USTs are the following:

- Code of Federal Regulations (CFR), Title 40, Section 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks;
- 40 CFR 109, Criteria for State, Local, and Regional Oil Removal Contingency Plan;
- 40 CFR 112, Oil Pollution Prevention (Spill Prevention Control and Countermeasures;
- 40 CFR 113, Liability Limits for Small Onshore Storage Facilities;
- 40 CFR 114, Civil Penalties for Violation of Oil Pollution Prevention Regulations; and

Clean Air Act (CAA), 55 Federal Register, revised 1990.

E.11.4.2 Spill Prevention Control and Countermeasure (SPCC) Plan

Federal regulations for the prevention of and response to spills from storage tanks, include those facilities with an aggregate UST storage quantity of 42,000-gallons, or 1,320-gallon in AST storage or 660-gallons in one AST. These regulations are contained in Title 40 of the Code of Federal Regulations, Part 112 (40 CFR 112). In general, 40 CFR 112 outlines the requirements for facilities required to prepare a SPCC Plan, which includes a description of the UST facility, identifies potential spill hazards, discusses the current prevention procedures and personnel training and makes recommendations for corrective actions.

E.11.4.3 State Regulations

The state of California has adopted more stringent set of UST and AST regulations than those of the federal government. These tank regulations outline, the reporting, monitoring, closure, and tank system requirements for USTs and ASTs. The following state laws and regulations are applicable for regulating USTs and ASTs:

- California Health and Safety Code (CHSC), Division 20, Chapter 6.7, Sections 25280 through 25299.7 Underground Storage of Hazardous Substances, October 1990;
- CHSC, Chapter 6.5, Sections 25250 through 25250.25 Management of Used Oil;
- California Code of Regulations (CCR), Title 23 Waters, Division 3 State Water Resources Control Board, Chapter 16 Underground Tank Regulations, May 5, 1994;.
- CCR, Title 22, Division 4.5, Chapter 12, Standards Applicable to Generators of Hazardous Wastes; and
- CCR, Title 22, Division 4.5, Chapter 15, Interim Status for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities.

E.11.4.4 Local Fire Department Requirements

The local fire department enforces the tank regulations set forth in the CCR and the regulations pertaining to human and environmental protection in the Uniform Fire Code (UFC) (1994 edition), particularly Articles 52 and 79, for the construction, installation, operation, and closure of ASTs and USTs storing flammable and combustible materials. In addition, the local fire enforce local and state regulations in the California Fire Code and California Fire Code Standards and any local ordinance pertaining to the fire code.

E.11.5 Hazardous Waste Generator and Storage Regulations

Business that generates and stores hazardous waste are require to file hazardous waste contingency and business plans set forth in the state hazardous waste program, as specified in, CCR, Title 22, Division 4.5, Chapter 12, Standards Applicable to Generators of Hazardous Waste and Chapter 15 Interim Status Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage and Disposal Facilities. These regulation outline the requirements for pretransportation and accumulation of wastes, personnel training, preparedness and prevention, contingency plan and emergency procedures and tank systems requirements.

E.11.6 Asbestos Regulations

Removal of asbestos containing material (ACM) is regulated by EPA, Occupational Safety And Health Administration (OSHA), and the state of California. Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the Clean Air Act, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The NESHAP regulations address the demolition or renovation of buildings with ACM. The Toxic Substances Control Act (TSCA) and the Asbestos Hazardous Emergency Response Act (AHERA) provide the regulatory basis for handling ACM in school buildings. AHERA and OSHA regulations cover worker protection for employees who work around or remediate ACM.

Renovation or demolition of buildings with ACM has the potential to release asbestos fibers into the air. Asbestos fibers could be released due to disturbance or damage of various building materials, such as pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other materials used for soundproofing or insulation. Only friable ACM, such as those listed above, are considered a health risk. Nonfriable ACM, such as transite piping, shingles, or floor tile, are not a health risk unless they are mechanically abraded in such a way as to produce dust.

E.11.7 Lead Paint Regulations

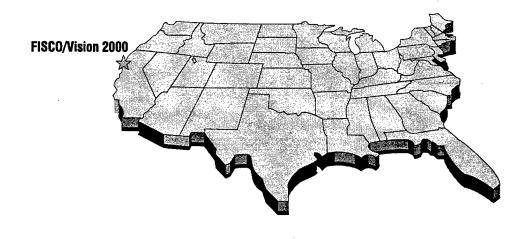
In 1992, Congress enacted the Residential Lead-based Paint Hazard Reduction Act of 1992, Title X of the Housing & Community Development Act (Public Law No. 102-550). As part of Title X, Congress amended the 1971 Lead-based Paint Poisoning Prevention Act (42 USC Section 4801-4846) and added a new Title IV to the Toxic Substance Control Act. Under this law, certain federally owned housing constructed prior to 1960 must be inspected for lead-based paint and lead-based paint hazards must be abated. Federal owned housing constructed after 1969 and before 1978 must be inspected for lead-based paint hazards and the data disclosed to prospective purchasers (42 USC Section 4822). The act also requires disclosure of lead-based paint hazard information.

E.11.8 PCB Regulations

The disposal of these PCBs is regulated under TSCA, which banned the manufacture and distribution of PCBs except for PCBs used in enclosed systems.

By definition, PCB equipment contains PCB concentrations of 500 parts per million (ppm) or more, whereas PCB-contaminated equipment contains PCB concentrations of 50 ppm or greater but less than 500 ppm. The EPA, under TSCA, regulates the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment. Primary federal regulations for controlling existing PCBs are found at 40 CFR Part 761. California regulations are more stringent than their federal equivalents and are found at California Code of Regulations Title 22. Within California, a waste fluid containing five ppm PCBs or more is regulated as hazardous.

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APPENDIX F SOCIOECONOMICS

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Appendix F Socioeconomics

This Appendix presents information on existing socioeconomic conditions within the region of influence at several geographic levels. First, an overview of regional characteristics is provided for the three counties (Alameda, Contra Costa, and San Francisco) most likely to be affected by the project. For context, a brief description of conditions in the nine-county Bay Area as a whole also is provided. Then a description of citywide characteristics is provided for the City of Oakland, the jurisdiction in which the project is located. Finally, information on community-specific characteristics is provided for the West Oakland neighborhood, located south of Highway 80 and west of Highway 980.

Information about regional socioeconomic conditions provides a context for understanding the project site. Although workers may commute to the project site from other parts of the Bay Area, the majority of the Port of Oakland workforce lives in Alameda, Contra Costa, and San Francisco counties. According to the Local and Regional Economic Impact of the Port of Oakland, approximately 80 percent of the port employees reside in this three-county region, and within this region, more workers reside in Oakland than in any other city (O'Connell 1991). Oakland is also the jurisdiction in which the project is located. The community characteristics of West Oakland are described in detail because this area is closest to the project site. In addition, West Oakland has a predominantly poor minority population, making the evaluation of environmental justice considerations an important component of the socioeconomic impact analysis.

Major topics addressed in this section include population, income, employment, housing, and environmental justice. The base year used in describing existing conditions is 1990. This is the year of the latest US Census and the year for which data are most consistently available. Other primary data sources include the Association of Bay Area Governments (ABAG), State Economic Development Department (EDD), State Department of Finance (DOF), the US Navy, the Port

of Oakland (Port), the City of Oakland, and the Coalition for West Oakland Revitalization (CWOR).

F.1 POPULATION

This section describes the population growth that occurred throughout the region between 1980 and 1990, based on US census data. Population projections for 2010, based on estimates prepared by ABAG, also are provided. Population increases and rates of change are summarized on Table F-1 and are discussed in each subsection below. Table F-2 presents information on the racial characteristics of the population in each geographic area. This information also is discussed and compared in the sections below.

Table F-1
Regional Population Trends and Projections
1980, 1990, and 2010

Area	1980	1990	1980-1990 % Change	2010	1990-2010 % Change
Bay Area	5,179,759	6,020,147	+16.2	7,539,600	+25.2
Alameda County	1,105,379	1,276,702	+15.5	1,547,000	+21.2
Contra Costa County	656,380	803,732	+22.4	1,104,700	+37.4
City and County of San Francisco	678,974	723,959	+6.6	819,000	+13.1
City of Oakland	339,337	372,242	+9.7	406,600	+9.2
West Oakland	21,130	24,188	+14.5	NA	NA

Source: ABAG Projections 1994. 1980 and 1990 US Census.

F.1.1 Regional Overview

Population in the nine-county Bay Area increased 16 percent between 1980 and 1990, reaching just over six million. ABAG projects that the region's population will exceed 7.5 million by 2010. This represents a slower rate of growth than was experienced in the 1980's—an average annual increase of 1.26 percent, compared with a 1.62 percent average annual increase between 1980 and 1990. Alameda, Contra Costa, and San Francisco Counties contain nearly half (47 percent) of the total population of the Bay Area.

In 1990, the racial composition of the Bay Area's population was approximately 69 percent Caucasian, nine percent African American, less than 1 percent Native American, 15 percent Asian, and six percent of other racial origins. Persons of Hispanic origin made up 15 percent of the population. Between 1980 and 1990, the racial makeup of the regional population remained relatively constant, except that the proportion of Caucasians decreased (from 76 to 69 percent), while the percent of Asians increased (from 9 to 15 percent). The percentage of persons of Hispanic

origin also increased, from 12 to 15 percent. The percentage of the regional population comprised of African Americans remained constant.

Table F-2 Regional Racial Composition Trends, 1980 and 1990

		P	ercent of Total	al Populatio	n	
		African-	Native	_		Hispanio
Area	Caucasian	American	American	Asian	Other	Origin
Bay Area						
1980	76.1	9.0	0.7	8.9	5.3	12.2
1990	68.9	8.9	0.6	15.3	6.4	14.9
Alameda County						
1980	67.9	18.4	0. <i>7</i>	7.8	6.1	11.8
1990	59.6	17.9	0.7	15.1	6.8	14.2
Contra Costa County						
1980	81.5	9.2	0.6	4.7	4.1	8.5
1990	76.0	9.3	0.7	9.6	4.5	11.4
City and County of San Francisco						
1980	58.2	12.7	0.5	21.7	6.8	12.3
1990	53.6	10.9	0.5	29.1	5.9	13.9
City of Oakland			,			
1980	38.2	46.9	0.6	7.8	6.4	9.6
1990	32.5	43.9	0.6	14.8	8.3	13.9
West Oakland						
1980	6.7	86.6	0.3	2.7	3.8	4.6
1990	9.3	75.6	0.5	9.1	5.7	8.8

Source: 1980 and 1990 US Census.

F.1.2 Alameda County

In 1990, Alameda County was the second most populous county in the Bay Area, after Santa Clara County, and it was the only county in the nine-county region to have four cities with populations of more than 100,000 residents— namely Oakland, Fremont, Hayward, and Berkeley. The county's population increased by more than 15 percent between 1980 and 1990, and it is projected to increase by an additional 21 percent between 1990 and 2010. Most of the projected growth, however, will occur in the Livermore/Amador Valley, which is expected to experience extremely high growth rates during this period. This eastern portion of the county includes the communities of Dublin, Livermore, and Pleasanton. Growth in the western portion of the county, which includes Oakland, is expected to be quite slow during this period, with the exception of Emeryville. While Emeryville is expected to attract more than 4,000 new residents, for a population increase of 72 percent, the populations of Oakland, Berkeley, Alameda, and

Albany all are expected to increase by less than 10 percent over the 20-year period. The Association of Bay Area Governments (ABAG) Projections '94 states that population growth in these areas is projected to be minimal since "much of western Alameda County is expected to reach buildout by the year 2000, especially along the bay plain" (ABAG 1993).

Of the approximately 1.28 million people living in Alameda County in 1990, approximately 60 percent were Caucasian, 18 percent were African American, less than one percent were Native American, 15 percent were Asian, and seven percent were of other racial origins. In addition, 14 percent of Alameda County residents identified themselves as being of Hispanic origin. The racial composition of Alameda county is different from that of the Bay Area as a whole. The percentage of Caucasian residents in the County is lower, while the percentage of African American residents is twice as high as it is in the region. The percentages of other racial groups are comparable to those found in the region. As in the region, the percentage of Caucasians in Alameda County has declined since 1980, while the percentage of African Americans has held steady, and the percentage of Asians has increased.

F.1.3 Contra Costa County

Contra Costa County's population increased by 22 percent between 1980 and 1990. This was the third highest rate of growth for any county in the Bay Area, behind Solano and Sonoma Counties. ABAG projects that population growth in Contra Costa County will increase by an additional 37 percent between 1990 and 2010.

Census data indicate that in 1990, the county's population was approximately 76 percent Caucasian, nine percent African American, less than one percent Native American, 10 percent Asian, and five percent persons of other racial origins. Persons of Hispanic origin made up about 11 percent of the county's population in 1990. The percentage of Caucasian residents in the county is higher than that of the region, and the percentage of Asians is lower. The percentage of Caucasian Contra Costa County residents has decreased since the 1980 census, while the percentages of all other racial groups have increased. Most groups had only slight increases, except for Asians, whose proportion of the total population doubled during the decade.

F.1.4 City and County of San Francisco

The City and County of San Francisco's population increased by less than 7 percent between 1980 and 1990. This was the second slowest rate of growth for any county in the Bay Area, above only Marin County, and only a fraction of the state of California's 25.7 percent growth rate for this same period (EDD 1994). ABAG projects that population growth will continue to be slow between 1990 and 2010. San Francisco's population is projected to increase by 13 percent during the 20-year forecast period, reaching 819,000 in 2010. By then, the city will have

only 11 percent of the region's population, compared to 13 percent in 1980 and 12 percent in 1990.

Census data indicate that in 1990 the city's population was approximately 54 percent Caucasian, 11 percent African American, less than one percent Native American, 29 percent Asian and six percent of other racial origins. Persons of Hispanic origin made up 14 percent of the city's population. The percentage of Caucasian residents in the city is lower than in the region, while the percentage of Asians is more than double the region's. The percentages of both Caucasian and African American San Francisco residents have decreased since the 1980 census, while the percentages of Hispanic and Asian residents have increased.

F.1.5 City of Oakland

According to US Census data, the City of Oakland's population increased by almost 10 percent between 1980 and 1990. Oakland contained the largest population in Alameda County in 1990, and it is ranked as the third most populous city in the region (ABAG 1993). ABAG projects that Oakland's population will increase by an additional nine percent between 1990 and 2010. This rate of increase for the 20-year period, however, is less than half the growth rate experienced during the 1980s.

In 1980, Oakland's population was 38 percent Caucasian, 47 percent African American, less than one percent Native American, eight percent Asian, and six percent of other racial origins. Almost 10 percent of the city's residents identified themselves as being of Hispanic origin. In 1990, the percentages of Oakland's Caucsasian and African American populations declined to 33 percent and 44 percent, respectively, while the Native American population remained less than one percent. Over the same period, the city's Asian population nearly doubled, to 15 percent, while persons of other racial origins increased slightly, to eight percent. The percentage of persons of Hispanic origin also increased, from 10 to 14 percent in 1990.

F.1.6 West Oakland

Sixteen census tracts (4014 through 4027) lie within West Oakland, which is located south of Highway 80, west of Highway 980, north of the Oakland Estuary, and east of San Francisco Bay in the City of Oakland. The population of this community increased from 21,130 in 1980 to 24,188 in 1990, for a rate of growth that was about fifty percent higher than Oakland's overall growth rate for the same period.

West Oakland has had a long history of being a racially and culturally diverse community. In the early 1900s, the population was mostly Irish, but there were also large numbers of Chinese and Portuguese settlers, as well as a small core of African Americans who were families of Pullman porters who had moved there to be close to the railroad terminus. During World War II, many more African

Americans settled in West Oakland to work at the Kaiser shipyards. Many chose to stay even after the war ended and industrial activity declined (CWOR 1994).

Census data indicate that West Oakland's racial composition changed substantially between 1980 and 1990. While the absolute number of African Americans decreased very slightly during this period (from 18,278 in 1980 to 18,262 in 1990), the percentage of the community's population represented by this group decreased substantially, from 87 percent in 1980 to 76 percent in 1990. All other racial groups increased both in number and percentage.

The racial composition of West Oakland is distinctly different from that of the City of Oakland as a whole, as well as that of the region. More than three-quarters of West Oakland's population is African American, compared with 44 percent citywide and nine percent in the region. The second largest racial group is Caucasians, at nine percent, compared with 33 percent citywide and 69 percent regionwide. West Oakland's proportions of Asian and Hispanic residents are considerably lower than both the city's and the region's, although these segments of the population are growing.

F.1.7 Income

This section describes income characteristics in terms of mean household income, per capita income, and the percentage of persons living below the poverty level. Table F-3 presents mean household income and per capita income information, as reported by the US Census in 1980 and 1990. This table provides a basis for comparing data aggregated for the census tracts in West Oakland with other regional data. Table F-3 also provides data on the percentage of persons living below poverty level for each geographic location.

F.1.8 Regional Overview

According to US Census data, per capita income in the region more than doubled between 1980 and 1990, increasing from \$9,369 to \$19,716 (Table F-3). The percentage of persons living below the poverty level declined slightly over the decade, from 8.9 to 8.5. While the mean household income in the region more than doubled between 1980 and 1990, ABAG estimates the real increase at 24 percent, adjusted for inflation. ABAG notes that a substantial portion of this increase in household income came from an increase in the number of workers per household, rather than increased individual earnings. Recessionary forces have seriously weakened income growth in the region during the 1990s.

F.1.9 Alameda County

The mean household income in Alameda County more than doubled, from \$21,773 in 1980 to \$45,995 in 1990 (Table F-4). Adjusted for inflation, however, the mean household income rose only 23 percent during this period (ABAG 1993). According to US Census data, the per capita income in the county was \$17,547 in 1990. The percentage of the population living below the poverty level decreased slightly, from 11.3 percent in 1980 to 10.6 percent in 1990.

Table F-3 Regional Income and Poverty Level Trends, 1980 and 1990

Area	Mean Household Income	Per Capita Income	Percentage of Persons below Poverty Level
Bay Area	· · · · · · · · · · · · · · · · · · ·		
1980	24,304	\$ 9,369	8.9
1990	52,082	19,716	8.5
Alameda County			
1980	21,773	8,537	11.3
1990	45,995	17,547	10.6
Contra Costa County			
1980	26,539	9,823	7.6
1990	55,033	20,748	7.3
City and County of San Francisco			
1980	20,552	9,265	13.7
1990	45,664	19,695	12.7
City of Oakland			
1980	17,970	<i>7,7</i> 01	18.5
1990	37,100	14,676	18.8
West Oakland			
1980	9,986	4,083	33.1
1990	21,940	7,763	36.4

Source: US Census, 1980 and 1990.

F.1.10 Contra Costa County

In 1990, households in Contra Costa County had a mean household income of \$55,033, more than double the mean in 1980 (Table F-3). Adjusted for inflation, the increase in the mean household income was only 19 percent. According to US Census data, the per capita income in the county was \$20,748, more than double the county's 1980 per capita income of \$9,823 (Table F-4). While the number of persons living below the poverty level increased by 8,781 between 1980 and 1990, the proportion of the county's population below the poverty level remained relatively constant (7.3 percent in 1990, compared with 7.6 percent in 1980).

F.1.11 City and County of San Francisco

The mean household income in San Francisco in 1990 was \$45,664, compared with \$20,552 in 1980 (Table F-3). Adjusted for inflation, this increase was 34 percent over the decade (ABAG 1993). According to US Census data, the per capita income in San Francisco was \$19,675 in 1990, more than double the per capita income of \$9,265 in 1980. The percentage of persons living below the poverty level declined slightly, from 13.7 percent to 12.7 percent.

Table F-4
Regional Labor Force, Civilian Employment and Unemployment,
1980 and 1990

Area	No. of Persons 16 and Over	No. in Labor Force	% in Labor Force	No. of Civilians in Labor Force	No. of Civilians Employed	% of Unemployed
Alameda County	9// 05/	560,012	64.7	552,621	514,727	6.9
1980	866,056	-		•	635,840	6.1
1990	1,005,755	689,517	68.6	676,896	055,070	0.1
Contra Costa County						
1980	500,757	326,530	65.2	324,216	305,313	5.8
1990	622,157	430,746	69.2	429,902	406,507	5.0
City and County of San Francisco						
1980	579,408	370,497	63.9	364,689	342,484	6.1
1990	620,818	417,147	67.2	412,385	386,530	6.3
City of Oakland	*					
1980	267,635	159,355	59.5	157,519	142,699	9.4
1990	288,543	181,419	62.9	179,513	162,488	9.5
West Oakland						
1980	15,652	6,536	41.8	6,257	4,875	22.1
1990	17,262	8,453	49.0	7,519	6,042	19.6

Source: US Census, 1980 and 1990.

F.1.12 City of Oakland

The mean household income in Oakland in 1990, was \$37,100, more than double the 1980 figure of \$17,970 (Table F-3). ABAG estimates the real increase as 20 percent, adjusted for inflation (ABAG 1993). Oakland's per capita income in 1990 was \$14,676, an increase of 90 percent from 1980, when the per capita income was \$7,701. Unlike the region and the other two counties, the percentage of persons living below poverty in Oakland rose between 1980 and 1990, from 18.5 percent to 18.8 percent. The percentage of persons living below the poverty level in Oakland is more than double the regionwide percentage.

F.1.13 West Oakland

Income statistics for West Oakland reveal it as a very poor community, relative to the rest of the City of Oakland, Alameda County, and the region. The mean household income more than doubled between 1980 and 1990, but it remained more than 40 percent below the citywide mean household income and less than half the countywide mean (Table F-3). Per capita income rose 90 percent between 1980 and 1990, from \$4,083 to \$7,763. This was roughly half the citywide per capita income and one-third the countywide per capita income. In West Oakland, as in the City of Oakland as a whole, both the number and percentage of persons living in poverty increased between 1980 and 1990, but West Oakland's percentage increased more markedly, from 33.1 percent in 1980 to 36.4 percent in 1990. This

is almost double the citywide percentage of persons living below poverty, and it is more than four times the 8.5 percent found regionwide.

F.1.14 Employment

This section provides information on labor force, unemployment rates and employment by industry. The first subsection below provides an overview of employment trends by sector for the nine-county Bay Area. Subsequent sections describe labor force participation rates, the number of persons employed, unemployment rates and employment by sector for the each of the three counties, the City of Oakland, and West Oakland. A discussion of FISCO and Port-related employment is included in the West Oakland section.

F.1.15 Regional Overview

The nine counties that comprise the Bay Area share a diversified and interconnected regional economy. San Francisco has served as a major financial and commercial center for the region, while the East Bay counties have attracted considerable industrial and manufacturing growth. Economic growth in the region was very strong from the 1940s until the mid-1970s. Since then, economic growth has slowed and the region has experienced several recessions. ABAG predicts that job growth from 1990 to 2010 will continue to be slow, relative to previous decades, and that the decentralization of jobs away from San Francisco to outlying suburbs will continue. Since 1980, the percentage of jobs in the services and retail trade sectors has been growing, while jobs in manufacturing and government have been shrinking. These trends are also expected to continue to 2010 (ABAG 1993).

Employed residents and unemployment. The number of employed Bay Area residents increased from 2.5 million in 1980 to 3.1 million in 1990, an increase of 24 percent. Employment growth is expected to slow considerably between 1990 and 2010, however, due mainly to the recession experienced in the 1990s. Over the 20-year forecast period, the number of employed residents in the region is expected to increase to 3.9 million by 2010, for an increase of about 23 percent. The rate of growth in the number of employed residents during these two decades, therefore, will be less than the growth rate that took place during the single decade between 1980 and 1990 (ABAG 1993).

Unemployment rates in the nine Bay Area counties, as calculated by California's Economic Development Division, ranged from 2.7 percent in Marin County to 5.6 percent in Solano County in 1990. Unemployment rates in the three-county region were in the middle of this range—4.2 percent in Alameda County, 4.3 percent in Contra Costa County, and 4.0 percent in San Francisco County, compared with the statewide unemployment rate of 5.6 percent. Unemployment is calculated by EDD using an economic model, resulting in unemployment rates that are different from (and lower than) the civilian unemployment rates reported by the US Census (Champlain 1996). Table F-4 shows unemployment rates derived from the census, so that comparisons can be drawn between West Oakland and the rest of the region.

Employment by sector. Table F-5 provides an overview of employment by selected industries for the three-county region, for the City of Oakland, and for West Oakland in 1990. As indicated on the table, the US Census for that year presents data for seven industrial sectors. All areas share a generally consistent pattern in the proportion of employed residents by sector. Nearly half of the three-county region's employed persons (46 percent) work in two of the industrial sectors, professional and related services (25 percent) and wholesale and retail trade (21 percent). These are followed, in descending order, by manufacturing, 13 percent; fire, insurance, and real estate (FIRE), nine percent; transportation, communications, and utilities - 9 percent; business and repair services, six percent; and construction, six percent.

F.1.16 Alameda County

Employed residents and unemployment. The number of employed Alameda County residents increased by 24 percent between 1980 and 1990. Growth in the number of employed residents is expected to slow considerably between 1990 and 2010, however, with the number of employed persons projected to increase by 20 percent over the 20-year period. The cities expected to experience the greatest increases in the number of employed residents during these two decades are Oakland, Livermore, Dublin, and Pleasanton (ABAG 1993).

As shown on Table F-4, 69 percent of persons 16 and over living in Alameda County were in the labor force in 1990, an increase from 65 percent in 1980. Alameda County's civilian unemployment rate in 1990 was 6.1 percent, down from 6.9 percent in 1980.

Employment by sector. Table F-5 includes a breakdown of employment by industrial sector in Alameda County in 1990, as reported by the US Census. The highest percentage of residents (46 percent) were employed in two sectors, the professional and related services sector (25 percent), and the wholesale and retail trade sector (21 percent). The lowest percentage of residents were employed in the Construction sector (six percent). The percentages of county residents employed in other industrial sectors were manufacturing, 16 percent; transportation, communications, and utilities, nine percent; FIRE, seven percent; and business and repair services, six percent.

F.1.17 Contra Costa County

Employed residents and unemployment. Table F-4 summarizes labor force and employment trends in Contra Costa County. The number of employed Contra Costa County residents increased by 33 percent between 1980 and 1990. This was considerably higher than the 24 percent growth rate of employed persons in the Bay Area as a whole. Growth in the number of employed residents is expected to slow between 1990 and 2010, with a 38 percent increase projected for the 20-year forecast period. This growth rate projection nevertheless is higher than the 23 percent increase projected for the Bay Area as a whole between 1990 and 2010.

Table F-5 Number of Employed Residents by Selected Industries, 1990

Area	Employed Persons 16 and Over	Construction	Manufacturing	Transportation, Communications and Other Utilities	Wholesale and Retail Trade	Fire, Insurance and Real Estate	Business and Repair Services	Professional and Related Services
Alameda County	635,840	36,508	100,180	56,626	130,601	47,121	38,561	161,248
Contra Costa County	406,507	31,543	47,056	34,150	84,165	46,217	23,068	96,243
City and County of San Francisco	386,530	16,620	35,748	31,418	80,990	41,617	27,292	105,373
City of Oakland	162,488	8,492	17,284	14,668	30,258	12,130	10,793	47,659
West Oakland	6,042	326	591	277	1,180	251	499	1,671

Source: 1980 and 1990 US Census.

As shown in Table F-4, 69 percent of persons 16 years or over living in the county were in the labor force in 1990, an increase from 65 percent in 1980. Contra Costa County's civilian unemployment rate in 1990 was 5.0 percent, down from 5.8 percent in 1980.

Employment by sector. As shown on Table F-5, the highest percentage of Contra Costa County residents in 1990 were employed in the professional and related services sector (24 percent), and the wholesale and retail trade sector (21 percent). Fewer residents were employed in manufacturing, 11.6 percent; FIRE, -11.4 percent; transportation, communications, and utilities, 8.4 percent; construction -7.8 percent; and services, six percent.

F.1.18 City and County of San Francisco

Employed residents and unemployment. The number of employed residents in the City and County of San Francisco increased 13 percent between 1980 and 1990 (Table F-4). Over the next two decades, the rate of growth is expected to be slower, with the number of employed residents projected to increase by only 13 percent over the 20-year period (ABAG 1993).

As shown on Table F-4, 67 percent of persons 16 and over living in San Francisco were in the labor force in 1990, compared with 64 percent in 1980. The civilian unemployment rate for the City and County of San Francisco was 6.3 percent in 1990, compared with a rate of 6.1 percent in 1980.

Employment by sector. In 1980, the highest percentage of San Francisco residents were employed in the professional and related services sector (27 percent), and wholesale and retail trade sector (21 percent), and the smallest percentage were employed in the construction sector (four percent). Of the remaining industrial sectors, 11 percent were employed in the FIRE sector, nine percent in manufacturing, eight percent in transportation, communications and utilities, and seven percent in business and repair services (Table F-5).

F.1.19 City of Oakland

Employed residents and unemployment. As indicated on Table F-4, the City of Oakland experienced a relatively low rate of growth in employment between 1980 and 1990, about 14 percent. Between 1990 and 2010, the employment growth rate for Oakland is projected to drop substantially lower than the growth rates for Alameda County and the three-county region as a whole during the same period. This projection reflects job losses due to the severe economic slowdown in California between 1990 and 1995, combined with the effects of military base closures (ABAG 1993).

As shown on Table F-4, 63 percent of persons 16 and over living in Oakland were in the labor force in 1990, compared with 60 percent in 1980. The City of Oakland's civilian unemployment rate in 1990 was 9.5 percent. This rate was substantially higher than those of Alameda County and the region.

Employment by sector. As shown on Table F-5, the distribution of employed Oakland residents among the selected industrial sectors generally conforms to the distribution within the three-county region as a whole. professional and related services employ the most residents, 29 percent, followed by wholesale and retail trade, at 19 percent. The Construction industry employs the lowest percentage of residents, five percent. Other sectors are manufacturing, 11 percent; transportation, communications and utilities, nine percent; FIRE, eight percent; and business and repair services, seven percent.

F.1.20 West Oakland

Employed residents and unemployment. West Oakland had proportionately fewer residents in the labor force compared with other parts of the region in both 1980 and 1990 (Table F-3). Less than half (49 percent) of persons 16 and over in West Oakland were in the labor force. This represented a substantial increase since 1980, when the proportion was 42 percent, but it is considerably lower than the percentages of persons in the labor force in Oakland (63 percent) and the three counties (67-69 percent) in 1990. The percentage of unemployed persons in West Oakland was 19.6 percent in 1990, down from 22.1 percent in 1980.

Employment by sector. As shown on Table F-5, the pattern of employment of West Oakland residents is similar to that of Oakland and the region, with a slightly greater proportion of residents employed in the transportation, communications and other utilities and business and repair services sectors. professional and related services employed the highest percentage of West Oakland residents (28 percent). This was followed by wholesale and retail trade - 20 percent; manufacturing, 10 percent; transportation, communications and other utilities, 10 percent; business and repair services, eight percent; construction, five percent; and FIRE, four percent.

Port of Oakland. According to the Port of Oakland Maritime Economic Impact Study, maritime activity related to the Port employed 6,694 persons in 1990. Table F-6 shows the number of employees by type. The largest percentage of jobs were in trucking (23 percent), government (15 percent), and warehousing (14 percent). Almost three-fourths of these workers lived in the three-county region, and more than 18 percent lived in Oakland in 1990 (Port of Oakland 1990).

This maritime activity at the Port generated more than \$220 million in personal income from direct jobs alone in 1990. The Port estimates that the direct jobs at its maritime facilities supported an additional 2,900 induced jobs in the region as a result of maritime industry worker spending, for a total of almost 10,000 jobs. In addition, Port activities indirectly support a wide variety of other types of businesses, such as importers and exporters, throughout the region.

Table F-6
Employment Related to Maritime Activity at the Port of Oakland, 1990

Employment Sectors	Number of Employees	Percent
Railroad	570	8.5%
Trucking	1,549	23.1%
Terminal employees	411	6.1%
ILWU (longshore)	562	8.4%
Towing	31	0.5%
Pilots	12	0.2%
Agents	472	7.1%
Surveyors/chandlers	30	0.4%
Forwarders	558	8.3%
Warehousing	924	13.8%
Container repair/storage	29	0.4%
Government/military	993	14.8%
Marine construction/shipyards	148	2.2%
Barge	27	0.4%
Shippers/consignees	100	1.5%
Port of Oakland staff	202	3.0%
Banking/insurance	75	1.1%
Total direct jobs	6,694	100.0%

Source: Port of Oakland, 1996.

FISCO. An estimated 5,591 workers were directly employed at FISCO facilities in 1990. These included 3,265 workers at shore facilities, plus 2,326 personnel associated with ships homeported at FISCO. Almost all of these jobs (5,327 or 95 percent) were located on FISCO parcels 4 and 5. Assuming the same multiplier for these jobs as for the Port's maritime jobs, these direct jobs would have supported an additional 2,422 jobs, for a total of over 8,000 jobs.

F.2 Housing

This section provides information on housing supply and housing costs in the project vicinity and the region. Table F-7 presents an overview of regional housing characteristics and trends, based on 1980 and 1990 US Census data. The table and narrative discussion include information on housing trends and vacancy rates for West Oakland, as well as for the City of Oakland, the three counties, and the region.

Table F-7
Regional Housing Characteristics and Trends, 1980 and 1990

	No. of		Median Value- Owner-Occupied	
Area	Housing Units	Vacancy Rate	House	Median Rent
Bay Area				
1980	2,061,343	4.2	\$ 98,100	\$ 285
1990	2,365,323	5.0	255,476	690
Alameda County				
1980	444,607	4.1	84,900	240
1990	504,109	4.9	225,300	626
Contra Costa County				
1980	251,951	4.0	94,300	266
1990	316,170	5.0	219,400	613
City and County of San Francisco				
1980	316,608	5.7	103,900	266
1990	328,471	7.0	298,900	613
City of Oakland				
1980	150,274	5.7	66,600	202
1990	154,737	6.6	117,400	485
West Oakland				
1980	9,666	11.7	35,921	126
1990	9,866	12.0	101,871	323

Source: 1980 and 1990 US Census.

F.2.1 Regional Overview

The housing stock in the nine-county Bay Area increased by approximately 15 percent between 1980 and 1990, reaching almost 2.4 million units. Almost half of the region's housing units are located in three counties— Alameda, Contra Costa, and San Francisco. The housing vacancy rate in the Bay Area as a whole was 5.0 percent in 1990, with a 3.2 percent vacancy rate for units that were actually available for sale and for rent.

Of the occupied housing units in the region in 1990, 56 percent were owner-occupied, and 44 percent were renter-occupied. The median rent in the Bay Area was \$690 in 1990. The median value of an owner-occupied unit was \$255,476. Between 1980 and 1990, the median value of a home in the Bay Area increased by more than 160 percent.

F.2.2 Alameda County

There were just over 500,000 housing units in Alameda County in 1990. The county's housing stock had increased by 13 percent since 1980, adding about 60,000 new housing units. Of the total housing units in the county in 1990, 4.9

percent were vacant. The vacancy rate for units available for rent and for sale was 3.0 percent.

The owner-occupancy rate in the county in 1990 was 53 percent. The median rent in Alameda County was \$626. The median home value was \$225,300. Home values increased by more than 165 percent from 1980, when the median home value in the county was \$84,900.

F.2.3 Contra Costa County

Contra Costa County's housing stock increased 26 percent between 1980 and 1990 (Table F-7). The vacancy rate for the total housing stock was 5.0 percent, up from 4.0 percent in 1980. The vacancy rate for units actually available for sale and for rent was 3.2 percent.

In 1990, 64 percent of Contra Costa's housing units were owner-occupied. The median value of owner-occupied homes was \$219,400. This reflects an increase of 133 percent from the 1980 median value of \$94,300. Nonetheless, this value is the lowest of the three counties, which may account for the higher rate of owner occupancy. The median rent was \$613 in 1990, compared to \$266 in 1980.

F.2.4 City and County of San Francisco

San Francisco had 328,471 housing units in 1990. The city's housing stock had increased by only four percent since 1980, reflecting the relative scarcity and high cost of land available for residential development, as well as the continuing suburbanization of the region. The vacancy rate in the city in 1990 was 7.0 percent, up from 5.7 percent in 1980. The vacancy rate for units actually available for sale and for rent, however, was 4.3 percent.

In 1990, 35 percent of homes were owner-occupied. This is considerably below the regionwide rate of 56 percent and reflects San Francisco's high housing costs relative to the rest of the region. The median value of an owner-occupied unit in 1990 was \$298,900, a 188 percent increase from 1980, when the median value was \$103,900. Median rent in San Francisco was \$613 in 1990, compared to \$266 in 1980.

F.2.5 City of Oakland

There were 154,737 housing units in Oakland in 1990. The city's housing stock had increased by only three percent since 1980, when there were 150,274 housing units. This slow rate of increase reflects the fact that Oakland's residential land is mostly built out. Of the total number of housing units in the city in 1990, 5.7 percent were vacant. This rate was slightly higher than Alameda County's vacancy rate of 4.9 percent. The vacancy rate for units in the city actually available for rent and for sale was 4.2 percent.

The owner-occupancy rate in the City of Oakland in 1990 was 39 percent, considerably lower than Alameda County's overall owner occupancy rate of 53

percent. The median rent was \$485, and the median value of an owner occupied home was \$117,400. Home values increased by 76 percent between 1980 and 1990. This is less than half the percentage increase experienced regionwide.

F.2.6 West Oakland

West Oakland contained almost 10,000 housing units in 1990. The local housing stock had increased only two percent between 1980 and 1990. Of the total housing units in West Oakland in 1990, 12.0 percent were vacant, more than double the 5.7 vacancy rate for the city. The vacancy rate for units in the area actually available for rent and for sale in 1990 was 6.7 percent.

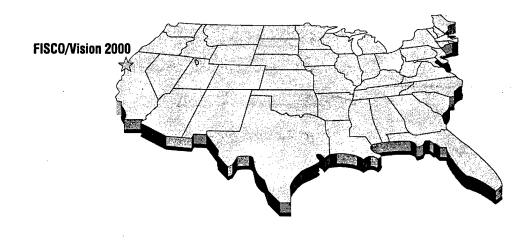
The owner-occupancy rate in West Oakland in 1990 was 18 percent—only half the citywide and one-third the regionwide owner-occupancy rate. This reflects the large number of public housing units in West Oakland. There are more than 1,000 units of government-sponsored housing in the community. Most of these are concentrated in the Campbell Village, Acorn, and Oak Center projects (CWOR 1994).

In 1990, the median rent in West Oakland was \$323 and the median value of an owner-occupied home was \$101,871. Home values increased by 184 percent from 1980, when the median value was \$35,921. West Oakland's housing stock is some of the oldest in the city. Many of the structures are not up to code or lack adequate heating or plumbing. CWOR reports that West Oakland contains 1,359 vacant and boarded up structures, which represents about 14 percent of all housing in the community. At the same time, the neighborhood's proximity to downtown Oakland has begun attracting a new population, which has raised fears about gentrification pressures (CWOR 1994).

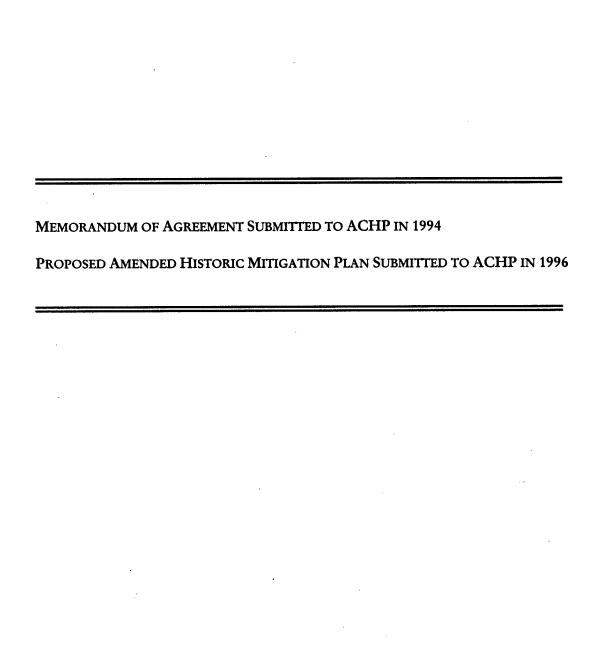
F.2.7 FISCO

There are three units of housing on FISCO that house Navy personnel: Quarters A (Buildings 324), Quarters B (Buildings 325), and Quarters C (Buildings 323). These three units are located on the block bounded by 3rd Street, E Street, 4th Street, and G street in the northern portion of FISCO.

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APPENDIX G CULTURAL RESOURCES



MEMORANDUM OF AGREEMENT SUBMITTED TO THE ADVISORY COUNCIL ON HISTORIC PRESERVATION PURSUANT TO 36 CFR SECTION 800.6(a)

WHEREAS, the Department of the Navy (Navy) has determined that the leasing of approximately 220 acres of the Fleet Industrial Supply Center (FISC), Oakland, California, (the undertaking) will have an effect on the Naval Supply Center Oakland Historic District, a property eligible for inclusion in the National Register of Historic Places, and has consulted with the California State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the Port of Oakland participated in the consultation and has been invited to concur in this Memorandum of Agreement;

NOW, THEREFORE, the Navy and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

The Navy and the Port of Oakland will ensure that the following measures are carried out:

- 1. Prior to the demolition of any of the buildings on the land to be leased to the Port of Oakland (Phases I III, Exhibit 1), the Navy shall contact the Office of National Register Programs, Western Region, National Park Service (NPS), 600 Harrison Street, Suite 600, San Francisco, California to determine what level and kind of recordation is required for the property. Unless otherwise agreed to by NPS, the Navy shall ensure that all documentation is completed and accepted by the Historic American Buildings Survey, NPS, prior to the demolition, and that copies of this documentation are made available to the SHPO and appropriate local archives designated by the SHPO.
- 2. By January 1, 1998 the Navy will prepare and initiate implementation of a Historic and Archeological Resources Protection (HARP) Plan in consultation with the SHPO, for those portions of the Naval Supply Center Oakland Historic District that will not be leased to the Port of Oakland and will nominate to the National Register of Historic Places, as required by Section 110(a)(2) of the National Historic Preservation Act, as amended, those remaining portions of the Naval Supply Center Oakland Historic District that appear to qualify.
- 3. The Navy, through FISC Oakland Public Affairs Officer, will allow for guided tours of the Naval Supply Center Oakland Historic District for interested community groups upon request on such terms and conditions as the Commanding Officer of FISC Oakland determines are compatible with the security and operation of the facility.

MEMORANDUM OF AGREEMENT

Naval Supply Center Oakland Historic District

Navy Lease to Port of Oakland

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- 4. The Port of Oakland will publicize tours of the Naval Supply Center Oakland Historic District and arrange for trained docents to lead the tours.
- 5. The Port of Oakland will phase demolition of the historic buildings on the property it leases from the Navy at FISC Oakland. Buildings will be demolished only after HABS recordation is complete and an approved sublease for use of the land occupied by the building(s) requires its (their) removal.
- 6. The Navy will provide the Pacific Locomotive Association, Inc., a non-profit corporation, railroad track for use on the Niles Canyon Railway, a historical railroad museum from the rail car marshaling yard of Naval Supply Center Oakland Historic District.
- 7. The Port of Oakland agrees to carry out the obligations set forth in its letter of July 11, 1994 to the Oakland Landmarks Preservation Advisory Board attached hereto as Exhibit 2. The Navy will make a vigorous effort to obtain Legacy or other funding in Fiscal Year 1995 pursuant to the Department of Defense Appropriations Act of 1991 (PL 101-511) et seq. to assist the Port with the obligations assumed by the Port in Exhibit 2. Except for the aforementioned effort to obtain funding, the Navy assumes no obligations or responsibilities with respect to the provisions of Exhibit 2.
- 8. Should the SHPO object within 30 days to any proposals of the HARP Plan for FISC Oakland prepared pursuant to this Memorandum of Agreement, the Navy shall consult with the SHPO to resolve the objection. If the Navy determines that the objection cannot be resolved, the Navy shall request the further comments of the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Section 800.6(b). Any Council comment provided in response to such a request will be taken into account by the Navy in accordance with 36 CFR Section 800.6(c)(2) with reference only to the subject of the dispute; the Navy's responsibility to carry out all actions under this Memorandum of Agreement that are not the subjects of the dispute will remain unchanged.

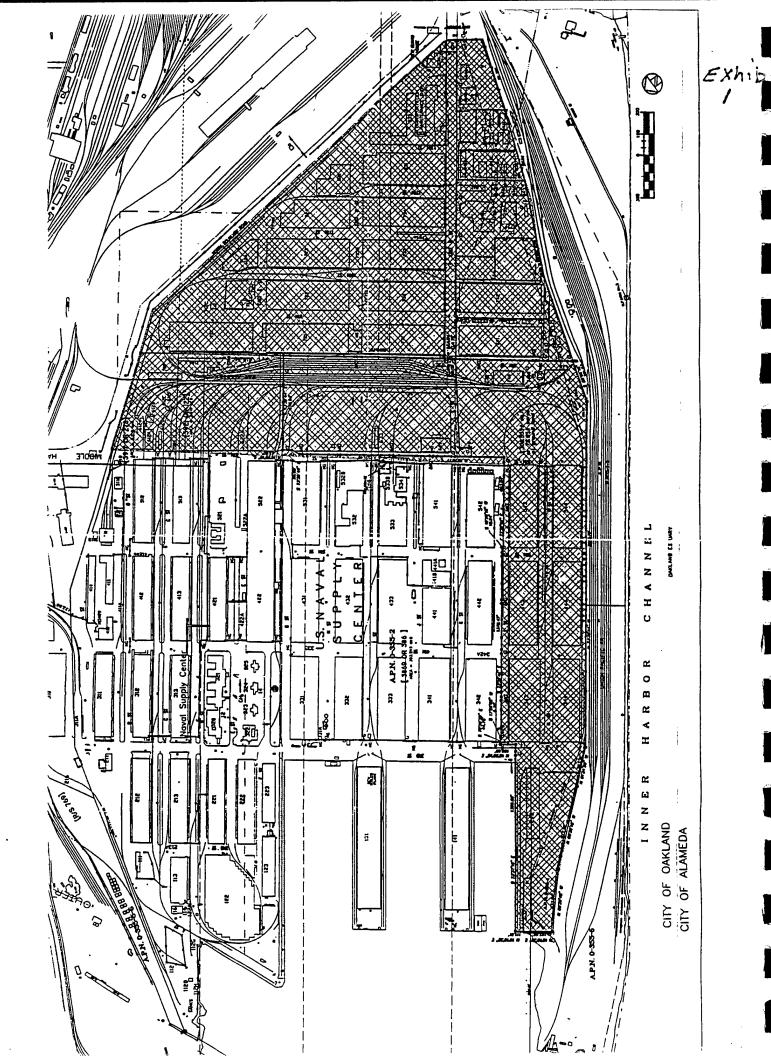
Execution of this Memorandum of Agreement by the Navy, the Port, and the California SHPO, its subsequent acceptance by the Council, and implementation of its terms, evidence that the Navy has afforded the Council an opportunity to comment on the lease of approximately 220 acres of FISC Oakland to the Port and its effects on historic properties, and that the Navy has taken into account the effects of the undertaking on historic properties.

MEMORANDUM OF AGREEMENT
Naval Supply Center Cakland Historic District
Navy Lease to Port of Oakland
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DEPARTMENT OF THE NAVY

[Name and Title of Signer]

J. R. Bailey, CAPT, SC, USN
[Name and Title of Signer] Commanding Officer, Fleet and Industrial Supply Center Oakland
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
By: Date: Date: December 5, 1994
CHERITY WIDELL CA STATE HISTORIC PRESERVATION OFFICER
Concur: APPROVED AS TO FORM AND LEGALITY THIS
2 2 A A THIS
PORT OF OAKLAND Ale Control 1994
By: Date: 11/15/94 Port Resolution No. 9431
PORT OF OAKLAND Addition of Manufacturery 11/15/04 Port Attorney
By:





July 11, 1994

Mr. Les Hausrath, Chair and Board Members Oakland Landmarks Preservation Advisory Board City Hall One City Hall Plaza Oakland, CA 94612

RE: Proposed Redevelopment of Naval Supply Center Oakland

Dear Mr. Hausrath and Board Members:

The Port has reviewed the recommendations of the Landmarks Preservation Board outlined in the letter signed by you dated April 27, 1994. After consideration of the options available, and consultation with City staff, the Port agrees to the following program to mitigate impacts to the potential historic district at the Naval Supply Center. As a formality, the Port will require approval from the Board of Port Commissioners prior to its implementation.

- Provide well publicized tours of the NSCO led by trained docents, in coordination with the Navy on various dates.
- 2. Phase demolition.
- 3. Make a vigorous effort to submit a grant application, and to secure funding in the amount of \$150,000 for a Legacy Grant under the Department of Defense. It is estimated that \$50 million is available for grants under this program. Applications are due by August 15, 1994.

The grant application would include:

- o Preparation of high caliber video for national viewing. PBS or documentary quality is desired. This effort would include a search for World War II footage of NSCO.
- o Development of oral histories of NSCO.
- O Development of a monograph in consultation with the Oakland Heritage Alliance, for public dissemination and for use in video.
- Development of NSCO "exhibits" or story boards in consultation with the Oakland Museum, to be located at Berth 40 (Port View Park under development) and at the Oakland Airport in one of the terminal buildings. Intent is to place exhibit in a location with maximum public exposure. The intent would be to use artifacts from NSCO, if available, in the exhibit.
- o The goal of the Landmarks Board is for video and exhibits, publications, etc. to capture the history of World War II and its tremendous impact on the social, cultural and industrial development of Oakland, and the role Oakland and its Naval facilities played in World War II events.
- o If the grant is not obtained the first year, the Port will resubmit the application the next year.

Mr. Les Hausrath and Board Members July 11, 1994 Page 2

- O If the Legacy Grant is secured, mitigation Item Number 7 below is dissolved.
- The Port will administer the Grant Application, and the Port will work to identify an appropriate grantee to administer the mitigation program, and include funds in the grant application for the costs of administration.
- 4. The Port, Navy and City, during the Section 106 process, will strive to develop this mitigation program for Historic Issues that will cover this lease action and future base closure actions that may lead to JIT and other berth development in NSCO location. This is due to the fact that there is not enough available information on the future uses of the base.
- Reconsider the preservation of the barracks building if the Navy and Port can, as an alternative, preserve in place one or more of the administrative buildings in the Northwest portion of Base, as part of the concept under Item Number 4. The Port will identify buildings in the northwest portion of the site that are suitable for preservation in lieu of the barracks. This area was nominated for preservation by West Oakland citizens that worked at the base during the War. They will be invited to participate in the identification of buildings for preservation. This concept will require Navy concurrence prior to final agreement.
- 6. Defer any Bay Trail or Public Access requirements or discussion until the base closure stage of the NSCO and initiation of the JIT project and environmental review. The Port will consult with Bay Trail advocates at this next juncture.
- 7. If Legacy funds are not granted within two years from the date of this letter, the Port will develop the video and exhibits listed under Item Number 3 above, but with more modest resources funded by Port. The amount of resources would be commensurate with lease and project development, and would not exceed \$55,000 in 1994 dollars, adjusted for inflation according to the Consumer Price Index, beginning one year, and no longer than two years from the date of this agreement.

The Port will determine the appropriate party to contract with a consultant to develop and administer the Mitigation Program. This may be a combination of the City, the Oakland Museum, the Port, and the Navy.

- 9. Record buildings to HABS standards prior to demolition.
 - o Include a description of the spatial and architectural relationships of the buildings that would be utilized in the formal video program discussed under Item Number 3 above.
 - o Select and preserve suitable artifacts for display.
- 10. This agreement is contingent upon the lease of the Naval Supply Center to the Port. If the lease is not consummated, the Port will not implement the above described mitigation program, since there will be no demolition of structures, and therefore no need for mitigation of impacts to the potential Historic District.
- 11. This represents the City's agreement for mitigation under the CEQA\NEPA review of the Naval Supply Center lease to the Port, as well as the NHPA Section 106 consultation.

Mr. Les Hausrath and Board Members July 11, 1994 Page 3

We look forward to working with the City to preserve this important part of Oakland's heritage. We believe that the creative use of resources will produce a product that will inform Oakland's citizens of the important role that the City played as part of the World War II effort.

Very truly yours,

Loretta Meyer,

Environmental Assessment Supervisor

cc: Helaine Kaplan-Prentice, Secretary

ONE CITY HALL PLAZA . OAKLAND, CALIFORNIA

Landmarks Preservation Advisory Board

July 14, 1994

TTY 839-6.

Loretta Mever Environmental Assessment Supervisor Port of Oakland 530 Water Street Oakland, California 94604-2064

Dear Ms. Meyer:

At its July 11, 1994 meeting, the Landmark Preservation Advisory Board expressed its concurrence with the mitigation program for demolition at the Oakland Naval Supply Center as outlined in your letter of the same date. A copy of your letter is attached.

For purposes of clarification, under Item 11, the Landmarks Board represents the City only in so far as the Board is empowered to advise on matters related to historic preservation. Also, it is our understanding that under Item 9 a video record of the site of quality useable for the documentary will be made prior to demolition.

Thank you very much for your substantial effort on behalf of thi important project, and for your cooperation in seeking an effective and comprehensive mitigation program. Please let us know if a letter of endorsement from the Board would help in support of the Legacy Grant application.

Sincerely,

aune Kaplan Thente LES HAUSRATH

Chairperson

Attachment F-M276 INSCOAK.HKP

PROPOSED AMENDED HISTORIC MITIGATION PLAN 12/3/96

BACKGROUND

- On August 9, 1994, the Board of Port Commissioners passed Port Resolution 94314 which approved a Memorandum of Agreement between the Port and the City of Oakland Landmarks Preservation advisory Board to create a mitigation program for the adverse effects on historic properties at the Naval Supply Center (now referred to as FISCO) as a result of the Port leasing 220 acres of FISCO.
- On December 12, 1994, the U.S. Navy entered into a Memorandum of Agreement between the Port of Oakland, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation which stipulated that the Port and the Navy agree to certain mitigation measures to take into account the effect of the Port lease of 220 acres and the proposed demolition of structures on the FISCO historic properties.
- Under the mitigation program the Port agreed to:

Provide publicized tours of FISCO in coordination with the Navy;

Phase demolition of buildings and structures;

Consider preservation of a "barracks" building or administration building if such preservation is feasible;

Record buildings to HABS standards prior to demolition;

Submit a grant application to the Department of Defense "Legacy Grant" program in the amount of \$150,000 to produce a documentary video, interpretive exhibits and other means of preserving and documenting the history of the FISCO and its impacts on Oakland and World War II. If "Legacy Grant" funds are not granted within two years the Port would provide the resources, up to \$55,000, to develop the above material.

• To date the following developments have occurred:

Tours of FISCO have been provided by the Navy and Port;

Structure demolition has been phased;

The preservation of the "barracks" and administration buildings was determined by the Port to be unfeasible;

The "barracks" buildings have been demolished;

All of the structures at FISCO have been recorded to HABS standards and the official FISCO Photographic Documentation (Historic American Building Survey) is housed at the Library of Congress, Washington, D.C. Copies of this official document are also with the Port of Oakland and the State Historic Preservation Office, Sacramento, CA.

Video footage of the buildings which have been demolished has been made, along with interviews with FISCO employees;

The Department of Defense has rescinded the Legacy Grant program; therefore, funds are not available for FISCO;

The Navy now plans to vacate and convey the entire FISCO site to the Port and the entire site is proposed to be redeveloped for the Port's Vision 2000 Program.

AMENDED AGREEMENT

- Whereas, pursuant to the Defense Base Closure and Realignment Act of 1995, FISCO is now scheduled for closure in September, Therefore, the Port (and the Navy) wish to amend the existing Memorandum of Agreement to recognize the disposal and conveyance of the entire FISCO property to the Port and to mitigate the unavoidable, adverse effects of the Port's of structures to accommodate (demolition redevelopment maritime expansion) on the historic properties at FISCO. Navy has determined that the disposal of FISCO and conveyance to the Port for reuse (the vision 2000 Program) will have an effect on the Naval Supply Center Oakland Historic District, a property eligible for inclusion in the National Register of Program entails Vision 200 Historic Places. The redevelopment of the entire FISCO site for a joint intermodal rail facility (Union Pacific, Southern Pacific, and Santa Fe railroads), up to five shipping terminals, necessary ancillary facilities, infrastructure, roads, and utilities to support this expansion and a public access and habitat restoration The Port plans to begin construction of the Vision 2000 Program following conveyance of the base in 1998 and complete most improvements by the year 2005.
- Port will agree to the following:

To continue to provide publicized tours, led by docents and in coordination with the navy, as long as practicable

and safe for public access to FISCO. Publicity for tours will be disseminated as widely as possible, including press releases to local media, announcements on KTOP (City of Oakland Channel) and other public access stations and coordination of publicity with the Oakland Tours Program and Oakland Heritage Alliance;

To continue to phase demolition of structures at FISCO;

Because the scope of the base closure has increased and because the Department of Defense "legacy Grants" are no longer available, the Port will develop, publicize and disseminate a documentary video to preserve the history and significance of FISCO, to be funded by the Port in an to exceed \$200,000. part of the As will implement production, the Port a one-time distribution and outreach program, which will include the production, packaging, and distribution of tapes and viewer's guides and a professional, good faith effort to pursue television or non-theatrical distribution of the video. If necessary, the Port will provide an additional \$25,000 to ensure the success of this mitigation through promotion and dissemination of the video. The Port will make its best efforts for the film to be produced by the team of historical preservationist, Marjorie Dobkins, and award winning documentary filmmaker, Bill Jersey, and their resumes are attached as Exhibit B. Also, a community advisory committee will review the script at key stages in the process.

The Port will provide funding, in an amount not to exceed \$55,000, for the preparation of a movable exhibit commemorating FISCO and its place in Oakland history. The Port further agrees to provide prominent, dedicated exhibition space at the Oakland Airport, as part of a program with the collaboration of and consultation with the Oakland Museum. The exhibit at the Airport will provide space for revolving exhibits related to Oakland's cultural history. The Port will also work with the Museum and other agencies to provide for the presentation of the FISCO exhibit at other appropriate locations on an ongoing basis.

The Port will include in the design and development of the public access areas at FISCO a structure, land form, or landscaping feature which captures in true scale the enormity of the facilities and activities required for FISCO's historic function. The Port will share design concepts and consult with the Oakland Public Art Advisory Commission, the Oakland Landmark's Board, Oakland Heritage Alliance, and ProArts, along with the West Oakland Community prior to final design.

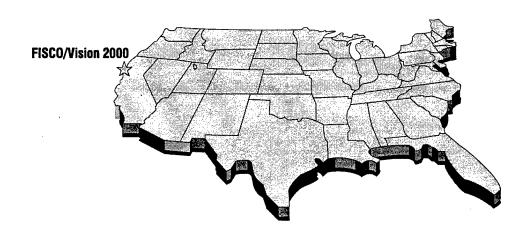
The Port will prepare and submit an application to the State Historic Resources Commission to designate the FISCO site as a State Historical Point of Interest and incorporate a recognition of this designation into the public access area.

The Port will make the three officers quarters buildings available for moving off-site and reuse by non-profit or other community based organizations at not charge for a period not to exceed three months prior to the demolition of the buildings. The Port shall provide funds up to the amount of the Port engineer's cost estimate of demolition The offer shall be widely to assist with the move. advertised and in accordance with indemnifications, releases and liability insurance to be provided in advance to the Port. The organizations receiving the building(s) are solely responsible, at no cost to the Port, to satisfy all requirements necessary to remove, transport, and resite the buildings. If no viable offers that meet the Port's criteria are received by the Port within the three months, the Port may demolish the houses. Port staff will make every effort to work with the West Oakland community to identify an agency, group, or individual interested in and capable of removing the houses for reuse.

The Landmarks Preservation Advisory Board agrees to the following:

As agreed, the Port will take one more final examination of the feasibility of saving a single warehouse structure on FISCO, the Port will provide documentation of this feasibility study to the LPAB. This documentation is dated December 2, 1996, and attached to the MOA as Exhibit A. Following the submittal, review and acceptance by the LPAB of this documentation, the LPAB will determine that the mitigation program outlined in this MOA preserves and disseminates the story of the Naval Supply Center in the best possible manner short of preservation of the district itself and that the preservation of a building in place is not feasible engineering land use and critical because of restrictions.

The LPAB agrees that this agreement constitutes the complete and final mitigation for the unavoidable, adverse effects on the historic district of FISCO through the development of the Vision 2000 Program by the Port.



APPENDIX H
BIOLOGICAL RESOURCES

SPECIES STATUS NEAR THE PROJECT SITE

H-1

LETTERS AND REPLIES CONCERNING LISTED SPECIES

- 1. LETTER FROM NATIONAL MARINE FISHERIES SERVICE TO US NAVY comment on NOP of EIR
- 2. LETTER FROM US NAVY TO NATIONAL MARINE FISHERIES SERVICE request for endangered species list
- 3. LETTER FROM NATIONAL MARINE FISHERIES SERVICE TO US NAVY response to request for endangered species list
- 4. LETTER FROM US NAVY TO US FISH AND WILDLIFE SERVICE request for endangered species list
- 5. LETTER FROM US FISH AND WILDLIFE SERVICE TO US NAVY response to request for endangered species list

Appendix H Biological Resources

The table below shows federal and state species of concern observed in the general area of the FISCO/Vision 2000 project site. The table also lists threatened and endangered species and those species proposed for listing as threatened or endangered. However, it is unlikely that any threatened and endangered species are present at the project site.

Table H-1
Species Status Near the Project Site

Common Name	Federal	State	CNPS
Scientific Name	Status	Status	Status
Plants			
Alkali milk-vetch	. <u>-</u>	SCSC	1B
Astragalus tener var. tener			
Kellogg's wedge-leaved horkelia	FSC		1B
Horkelia cuneata ssp. sericea			
Point Reyes (Northcoast) birds beak	FSC	-	1B
Cordylanthus maritimus ssp. palustris			
Adobe sanicle	FSC	SR	1B
Sanicula maritima			_
San Francisco Bay spineflower	FC	·	1B
Chorizanthe cuspidata var.			
cuspidata	EC	SE	1B
Santa Cruz tarplant Holocarpha macradenia	FC	3E	110
Holocalpha macradema			
<u>Invertebrates</u>			
San Francisco lacewing	FSC		-
Nothochrysa californica			
Bridges' coast range shoulderband snail	FSC		
Helminthoglypta nickliniana			
Ricksecker's water scavenger beetle	FSC		-
Hydrochara rickseckeri			
Fish			
Green sturgeon	FSC	 ,	_
Acipenser medirostris			
Longfin smelt	FSC	SCSC	<u></u> ,
Spirinchus thaleichthys	- -		
Coho salmon	FPT	SSCT	_
Oncorhynchus kisutch			
Delta smelt	FT	ST	_
		~ -	

Common Name	Federal	State	CNPS
Scientific Name	Status	Status	Status
Sacramento splittail	FPT		
Pogonichthys macrolepidotus			
Tidewater goby	FE	SCSC	
Eucyclogobius newberryi			
,- '8			
<u>Amphibians</u>			
Foothill yellow-legged frog	FSC	SCSC	-
Rana boylii			
California red-legged frog	FT	SCSC	-
Rana aurora draytonii		2020	
California tiger salamander	FC	SCSC	-
Ambystoma californiense			
Reptiles			
Alameda whipsnake	FPE	ST	-
Masticophis lateralis euryxanthus	11.5		
California horned lizard	FSC	SCSC	
Phrynosoma coronatum frontale	100	0000	
Northwestern pond turtle	FSC	SCSC	
Clemmys marmorata m.			
Southwestern pond turtle	FSC	SCSC	
Clemmys marmorata p.			
<u>Birds</u>			
Double crested cormorant	-	SCSC	
Phalacrocorax auritus			
California clapper rail	FE	SE	-
Rallus longirostris obsoletus	700	CF.	
Western snowy plover	FT	SE	
Charadrius alexandrinus nivosus	ECC	ST	
California black rail	FSC	31	
Laterallus jamaicensis coturniculus	ECC	SCSC	
Alameda song sparrow	FSC	3636	- ·
Melospiza melodia maxillaris	FSC	SCSC	_
Bell's sage sparrow	rsc	3030	
Amphispiza belli b.	FT	SE	
Bald eagle Haliaeetus leucocephalus	1, 1	312	
	FSC		
Ferruginous hawk	130		
Buteo regalis Burrowing owl		SCSC	
Speotytoaunicularia		0000	
Little willow flycatcher	FSC		
Empidonax taillii brewsteri	100		
Saltmarsh common yellowthroat	FSC	SCSC	_
Geothlypis trichas sinuosa			
Tricolored blackbird	FSC	SCSC	_
Agelaius tricolor			
116010101			

Common Name	Federal	State	CNPS
Scientific Name	Status	Status	Status
<u>Mammals</u>			
Salt marsh harvest mouse	FE	SE	_
Reithrodontomys raviventris			
Salt marsh wandering shrew	FC	SCSC	
Sorex vagrans halicoetes			
Alameda Island mole	FSC	SCSC	_
Scapanus latimanus parvus			
Berkeley kangaroo rat	FSC		· _
Diptodomys heermanni			
berkleyensis			
Fringed myotis bat	FSC		_
Myotis thysanodes			
Greater western mastiff bat	FSC	SCSC	
Eumops perotis californicus			
Long-eared myotis bat	FSC		
Myotis evotis			
Long-legged myotis bat	FSC		
Myotis volans			
Pacific western big-eared bat	FSC		
Plecotus townsendii townsendii			
San Francisco dusky-footed woodrat	FSC	SCSC	_
Neotoma fuscipes annectens			
Yuma myotis bat	FSC	_	
Myotis yumanensis			

Source: California Department of Fish and Game 1995; Skinner and Pavlik 1994; US Fish and Wildlife Service 1996

	Federal Status		State Status	Califor	nia Native Plant Society (CNPS) Status
FE	Endangered	SE	= Endangered		
FT	Threatened	ST	= Threatened	List 1A	= Presumed extinct in
FC	 Candidate (formerly 	SR	=Rare		California
	C1)	SCSC	 California species of 	List 1B	- Rare and endangered
FPE	= Proposed		special concern		in California and
	endangered	CEQA	- Protected under		elsewhere
FPT	 Proposed threatened 		CEQA	List 3	= Need more
FSC	= Species of concern (formerly C2)	SSCT	 Candidate for listing as threatened 		information - a review list
FSCR	 Species of concern recommended listing 			List 4	Limited distributiona watch list

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ITED STATES DEPARTMENT O: NMERCE National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE

Southwest Region Habitat Conservation Division 777 Sonoma Avenue, Room 325 Santa Rosa, California 95404

February 7, 1994

F/SW022:DBM

Mr. Raymond Chiang
Environmental Engineer
Environmental Planning Branch
Western Division Naval Facilities Engineering Command
P.O. Box 727
San Bruno, California 94066

Dear Mr. Chiang:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of an Environmental Impact Report/Environmental Impact Statement (EIR\EIS) for the Commercial Uses of a Portion of Naval Supply Center Oakland. The following comments are meant to assist you in the completion of the EIR/EIS.

The National Marine Fisheries Service is responsible for preserving and enhancing marine, estuarine, and anadromous fish resources and the habitats that support these resources. The EIR/EIS should fully address any impacts associated with these resources.

We recommend that the EIR/EIS fully describe all dredge and fill activities, documenting the volumes of material and the size of paticular areas to be modified or impacted. The requirements of a long-term future maintenance dredging and disposal plan must be addressed in addition to new dredging proposed for the redevelopment project. Upland disposal of dredged material is preferred.

Upland activities planned for redeveloping the port facilities should be described, especially those that contribute to water quality problems of the bay. For example, a stormwater management plan should be described indicating runoff management with oil and grease traps before entry into the bay, or to a sewer system if appropriate.

If any redevelopment activities require fill in water areas or requires shore realignments, rip-rap, or bulkheads, these items will also need justification and an alternatives analysis.

If you have questions concerning these comments or wish to discuss the project further, please contact Mr. Dante Maragni of My staff at: National Marine Fisheries Service, Southwest Region, Habitat Conservation Division, 777 Sonoma Avenue, Room 325, Santa Rosa, California 95404; telephone 707-578-7513.

Sincerely,

James R. Bybee

Environmental Coordinator

Northern Area

cc: Port of Oakland, C. Schwarz



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B 185NR/EP-970 10 May 1996

Mr. James Bybee National Marine Fisheries Service 777 Sonoma Ave. Rm 325 Santa Rosa, CA 95404

Dear Mr. Bybee:

We request a list of federally listed threatened and endangered species potentially occurring at the Naval and Fleet Industrial Supply Center, Oakland (FISCO), California. FISCO has been identified for closure pursuant to the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510).

Current schedule for operational closure in September 1998. The Port of Oakland will generate a reuse plan identifying the future land use of the facility. Reuse is expected to focus on the development of a joint intermodal terminal, expansion of marine freight handling terminals, development of a public access, and habitat mitigation areas. The anticipated issues of concern regarding the reuse by the Port of Oakland include: transportation, circulation, and traffic impacts including railroad, truck and automobile; geologic and hydrologic conditions affecting reuse; cultural resources; air quality; hazardous materials and hazardous waste; and cumulative effects of waterfront activities.

FISCO is located on approximately 541 acres on the eastern side of San Francisco Bay, south of the San Francisco-Oakland Bay Bridge, within the City of Oakland. The facility consist of four types of operations: general supply operations, waterfront operations, administration, and miscellaneous tenant operations. In 1995, the Port of Oakland began a 50 year lease of 220 acres of FISCO to support their intermodal rail facilities and maritime-cargo related uses.

Please provide the species list within 30 days of receipt of this letter. If you have other environmental concerns which may affect the closure or reuse of the facility, we would appreciate receiving those concerns at this time.

For additional information our point-of-contact is Mr. Gary Munekawa, Attention: Code 185GM (telephone 415-244-3022), at the letterhead address.

Sincerely,

Douglas R. Pomeroy

Biology/Base Closure Section

Encls.



UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE

Southwest Region 777 Sonoma Ave. Rm 325

Santa Rosa, CA 95404

June 6, 1996 F/SW031:PR

Mr. Douglas R. Pomeroy Biology/Base Closure Section Department of the Navy Engineering Field Activity, West Naval Facilities Engineering Command 900 Commodore Drive San Bruno, California 94066-5006

Dear Mr. Pomeroy:

This letter is in response to your request of May 10, 1996 regarding the presence of Federally listed threatened or endangered species or critical habitat that may be affected by the proposed closure and reuse of the Naval and Fleet Industrial Supply Center (FISCO) in Oakland, California.

Available information indicates that the Federally listed endangered Sacramento River winter-run chinook salmon may occur at the project site. No critical habitat occurs at the proposed project site. No other listed species under the jursidiction of the National Marine Fisheries Service occur in the project area. Your letter also requested identification of other environmental concerns which may affect the closure or reuse of the base facility. My letter of February 7, 1994 to Mr. Raymond Chiang regarding the Notice of Preparation identified environmental concerns with maintenance dredging and disposal, in-water fill or rip-rap placement, and water quality impacts from stormwater runoff. I have attached a copy of this letter for your reference.

The U.S. Fish and Wildlife Service (USFWS) may have listed species or critical habitat under its jurisdiction in the project area. Please contact Mr. Joel Medlin, Field Supervisor, USFWS, at 2800 Cottage Way, Room E-1803, Sacramento, California 95925, or (916) 979-2710, regarding the presence of listed species or critical habitat under USFWS jurisdiction that may be affected by your project.

My staff is available to review the EIR/EIS when it becomes available. If you have questions concerning these comments, please contact Ms. Penny Ruvelas of my staff at (707) 575-6062.



Sincerely,

James R. Bybee V Environmental Coordinator

Northern Area

cc: Craig Wingert, NMFS Deborah McKee, DFG



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST NAVAL FACILITIES ENGINEERING COMMAND 900 COMMODORE DRIVE SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B 185NR/EP-969 10 May 1996

Mr. Joel Medlin U.S. Fish and Wildlife Service Sacramento Field Office 2800 Cottage Way, Room E-1803 Sacramento, CA 95825-1846

Dear Mr. Medlin:

We request a list of federally listed threatened and endangered species potentially occurring at Fleet and Industrial Supply Center Oakland, (FISCO) California. FISCO has been identified for closure pursuant to the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510).

Current schedule for operational closure is September 1998. The Port of Oakland will generate a reuse plan identifying the future land use of the facility. Reuse is expected to focus on the development of a joint intermodal terminal, expansion of marine freight handling terminals, development of a public access, and habitat mitigation areas.

The facility is located on the eastern shore of San Francisco Bay, just south of the San Francisco-Oakland Bay Bridge and adjacent to the Port of Oakland. The facility is intensely developed and was constructed in 1940 on 541 acres of former marsh and submerged tideland. The facility is divided into six land use areas: administration/personnel support area, central supply area, waterfront area, residential area, tenant area, and Port of Oakland leased area (a map of the facility is enclosed).

Please provide this list within 30 days of receipt of this letter. If you have other concerns which may affect the closure or reuse of this facility pursuant to the Base Realignment and Closure process, we would appreciate receiving those concerns at this time.

For additional information our point-of-contact is Mr. Gary Munekawa, Attention: Code 185GM (telephone 415-244-3022), at the letterhead address.

Sincerely,

Douglas R. Pomeroy

Biology/Base Closure Section

Encls.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1803
Sacramento, California 95825

1-1-96-SP-986

June 27, 1996

Mr. Douglas R. Pomeroy, Biology/Base Closure Section Attn: Mr. Gary Munekawa, Code 185GM Department of the Navy, Engineering Field Activity, West Naval Facilities Engineering Command 900 Commodore Drive San Bruno, California 94066-5006

Subject:

Species Lists for the Fleet and Industrial Supply Center

Oakland, Alameda County, California

Dear Mr. Pomeroy:

As requested by letter from your agency dated May 10, 1996, you will find enclosed lists of sensitive species that may be present in or may be affected by projects in the subject project area (see Enclosures A and B). These lists fulfill the requirement of the Fish and Wildlife Service (Service) to provide species lists pursuant to section 7(c) of the Endangered Species Act of 1973, as amended (Act).

The Service used your map(s) and/or other information to locate the proposed project on an U.S. Geological Survey (USGS) 7.5 minute quadrangle map(s)(Quads). The animal species listed in Enclosure A are those species we believe may occur within, or be affected by projects within, the USGS Quad 466D, where your project is planned.

The plants listed in Enclosure A are those that have actually been observed in the project Quad(s). Enclosure B is a list of sensitive plants that have been observed in surrounding Quads. These plants may also occur in the Quad(s) where your project is planned.

Some of the species listed in Enclosures A and B may not be affected by the proposed action. A trained biologist or botanist, familiar with the habitat requirements of the listed species, should determine whether these species or habitats suitable for these species may be affected by the proposed action.

Some pertinent information concerning the distribution, life history, habitat requirements, and published references for the listed species is available upon request. This information may be helpful in preparing the biological assessment for this project, if one is required. Please see Enclosure C for a discussion of the responsibilities Federal agencies have under section 7(c) of the Act and the conditions under which a biological assessment must be prepared by the lead Federal agency or its designated non-Federal representative.

Formal consultation, pursuant to 50 CFR § 402.14, should be initiated if you determine that a listed species may be affected by the proposed project. If you determine that a proposed species may be adversely affected, you should consider requesting a conference with our office pursuant to 50 CFR § 402.10. Informal consultation may be utilized prior to a written request for formal

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Mr. Douglas R. Pomeroy

consultation to exchange information and resolve conflicts with respect to a listed species. If a biological assessment is required, and it is not initiated within 90 days of your receipt of this letter, you should informally verify the accuracy of this list with our office.

Candidate species are currently being reviewed by the Service and are under consideration for possible listing as endangered or threatened. Candidate species have no protection under the Endangered Species Act, but are included for your consideration as it is possible that one or more of these candidates could be proposed and listed before the subject project is completed. Should the biological assessment reveal that candidate species may be adversely affected, you may wish to contact our office for technical assistance. One of the potential benefits from such technical assistance is that by exploring alternatives early in the planning process, it may be possible to avoid conflicts that could otherwise develop, should a candidate species become listed before the project is completed.

The Service recently changed its policy on candidate species. The term candidate now strictly refers to species for which the Service has on file enough information to propose listing as endangered or threatened. Former candidate category 2 species - species for which listing is possibly appropriate but for which the Service lacks sufficient information to support a listing proposal - are now called species of concern. They are no longer monitored by the Service. However we have retained them on the enclosed list for general information. We encourage consideration of them in project planning, as they may become candidate species in the future.

If the proposed project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by the U.S. Army Corps of Engineers (Corps), a Corps permit shall be required, pursuant to section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act. Impacts to wetland habitats require site specific mitigation and monitoring. You may request a copy of the Service's General Mitigation and Monitoring Guidelines or submit a detailed description of the proposed impacts for specific comments and recommendations.

Please contact Mr. Michael Thabault at (916) 979-2725 if you have any questions regarding the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of the section 7 office assistant at this address. If you have any questions regarding wetlands, contact Mr. Mark Littlefield at (916) 979-2113.

Sincerely,

Field Supervisor

Enclosures

1

Enclosure A

Federally Listed and Other Sensitive Species that May Occur in or be Affected by Projects in the Area of the Following Selected Quads

File Reference 1-1-96-SP-986 June 12, 1996

466D OAKLAND WEST

LISTED SPECIES

Mammals

salt marsh harvest mouse, Reithrodontomys raviventris(E)

Birds

American peregrine falcon, Falco peregrinus anatum(E)
California brown pelican, Pelecanus occidentalis californicus(E)
California clapper rail, Rallus longirostris obsoletus(E)
California least tern, Sterna antillarum (-albifrons) browni(E)
bald eagle, Haliaeetus leucocephalus(T)
western snowy plover, Charadrius alexandrinus nivosus(T)

Amphibians

California red-legged frog, Rana aurora draytonii(T)

Fish

delta smelt, Hypomesus transpacificus(T)
tidewater goby, Eucyclogobius newberryi(E)
winter-run chinook salmon, Oncorhynchus tshewytsche(E)
winter-run chinook salmon crit. habitat, Oncorhynchus tshewytsche(E)

PROPOSED SPECIES

Reptiles

Alameda whipsnake, Masticophis lateralis euryxanthus(PE)

Fish

Coho salmon, Oncorhynchus kisutch(PT)
Sacramento splittail, Pogonichthys macrolepidotus(PT)

CANDIDATE SPECIES

Amphibians

California tiger salamander, Ambystoma californiense(C)

Plants

Santa Cruz tarweed, Holocarpha macradenia(C)

SPECIES OF CONCERN

Mammals

Alameda Island mole, Scapanus latimanus parvus(SC)
Berkeley kangaroo rat, Dipodomys heermanni berkleyensis(SC)
Pacific western big-eared bat, Plecotus townsendii townsendii(SC)
San Francisco dusky-footed woodrat, Neotoma fuscipes annectens(SC)
Yuma myotis bat, Myotis yumanensis(SC)
fringed myotis bat, Myotis thysanodes(SC)

Enclosure A

Federally Listed and Other Sensitive Species that May Occur in or be Affected by Projects in the Area of the Following Selected Quads

File Reference 1-1-96-SP-986 June 12, 1996

Mammals, continued

greater western mastiff-bat, Eumops perotis californicus(SC) long-eared myotis bat, Myotis evotis(SC) long-legged myotis bat, Myotis volans(SC) salt marsh vagrant shrew, Sorex vagrans halicoetss(SC)

Birds

Alameda (South Bay) song sparrow, Melospiza melodia maxillaris(SC) Bell's sage sparrow, Amphispiza belli belli(SC) black rail, Laterallus jamaicensis(SC) ferruginous hawk, Buteo regalis(SC) little willow flycatcher, Empidonax traillii brewsteri(SC) saltmarsh common yellowthroat, Geothlypis trichas sinuosa(SC) tricolored blackbird, Agelaius tricolor(SC)

Reptiles

California horned lizard, Phrynosoma coronatum frontale(SC) northwestern pond turtle, Clemmys marmorata marmorata(SC) southwestern pond turtle, Clemmys marmorata pallida(SC)

Amphibians

foothill yellow-legged frog, Rana boylii(SC)

Invertebrates

Bridges' Coast Range shoulderband snail, Helminthoglypta nickliniana bridgesi(SC)
Ricksecker's water scavenger beetle, Hydrochara rickseckeri(SC)
San Francisco lacewing, Nothochrysa californica(SC)

Plante

Kellogg's (wedge-leaved) horkelia, Horkelia cuneata ssp. serices(SC) San Francisco Bay spineflower, Chorizanthe cuspidata var. cuspidata(SC) adobe sanicle, Sanicula maritima(SC) alkali milk-vetch, Astragalus tener var. tener(SC) northcoast bird's-beak, Cordylanthus maritimus ssp. palustris(SC)

(E)--Endangered

Species that is in danger of extinction throughout all or a significent portion of its range

(T)-Threatened

Species that is likely to become endangered within the foreseeable future

(P)--Proposed

Species that he been proposed in the Federal Register to be listed as endangered or threatened

(CH)--Critical Habitat

Area essential to the conservation of a species

(C)--Candidate:

Species for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened

biobosal to list as

(SC)--Spacies of Concern:

Species for which existing information indicated may warrant listing, but for which substantial biological information to support a proposed rule is lacking.

(CR)--Recommended for Candidate Status

()--Listing petitioned.

2

1

Enclosure B

Sensitive Plant Species That May Occur in the Quads Surrounding Quad 466D, Galifornia

File Reference 1-1-96-SP-986 June 12, 1996

LISTED SPECIES

California sea blite, Suaeda californica(E)
Marin dwarf-flax, Hesperolinon congestum(T)
Presidio clarkia, Clarkia franciscana(E)
Presidio manzanita, Arctostaphylos hookeri ssp. ravenii(E)
Presidio manzanita, Arctostaphylos hookeri ssp. ravenii(E)
Tiburon jewelflower, Streptanthus niger(E)
Tiburon mariposa lily, Calochortus tiburonensis(T)
Tiburon paintbrush, Castilleja affinis ssp. neglecta(E)
beach layia, Layia carnosa(E)
marsh sandwort, Arenaria paludicola(E)
robust spineflower, Chorizanthe robusta(E)
white-rayed pentachaeta, Pentachaeta bellidiflora(E)

PROPOSED SPECIES

San Bruno Mountain manzanita, Arctostaphylos imbricata(PT) San Francisco lessingia, Lessingia germanorum(PE) pallid manzanita (Alameda manzanita), Arctostaphylos pallida(PT) showy Indian clover, Trifolium amoenum(PE)

CANDIDATE SPECIES

Santa Cruz tarweed, Holocarpha macradenia(C)

SPECIES OF CONCERN

Diablo rock-rose, Helianthella castanea(SC) Kellogg's (wedge-leaved) horkelia, Horkelia cuneats ssp. sericea(SC) Marin checkermallow, Sidalcea hickmenii ssp. viridis(SC) Mission Delores campion, Silene verecunda ssp. verecunda (SC) Montara manzanita, Arctostaphylos montaraensis(SC) San Francisco Bay spineflower, Chorizanthe cuspidata var. cuspidata(SC) San Francisco gumplant, Grindelia hirsutula var. maritima(SC) San Francisco manzanita, Arctostaphylos hookeri ssp. franciscana(SC) San Francisco owl's-clover, Triphysaria floribunda(SC) San Francisco popcornflower, Plagiobothrys diffusus(SC) Tiburon tarweed, Hemizonia multicaulis ssp. vernalis(SC) adobe sanicle, Sanicula maritima(SC) alkali milk-vetch, Astragalus tener var. tener(SC) compact cobweb thistle, Cirsium occidentale ver. compactum(SC) delta tule-pea, Lathyrus jepsonii var. jepsonii(SC) fragrant fritillary, Fritillaria liliacea(SC) most beautiful (uncommon) jewelflower, Streptanthus albidus ssp. peramoenus (SC) northcoast bird's-beak, Cordylanthus maritimus ssp. palustris(SC) pappose spikeweed, Hemizonia parryi ssp. congdonii(SC)

Enclosure B

Sensitive Plant Species That May Occur in the Quads Surrounding Quad 466D, California

File Reference 1-1-96-SP-986 June 12, 1996

(E)--Endangered

Species that is in danger of extinction throughout all or a significant portion of its range

(T)—Threatened

Species that is likely to become endangered within the foreseeable future

(P)-Proposed

Species that he been proposed in the Federal Register to be listed as endangered or threatened

(CH)--Critical Habitat

Area essential to the conservation of a species

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Species for which the Fish and Wildlife Service has sufficient biological information to support a

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(SC)--Species of Concern:

Species for which existing information indicated may warrant listing, but for which substantial

biological information to support a proposed rule is lacking.

(CR)-Recommended for Candidate Status

()--Listing petitioned.

2

Enclosure C

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) and (c) OF THE ENDANGERED SPECIES ACT

SECTION 7(a) Consultation/Conference

Requires: (1) federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species; (2) Consultation with FWS when a federal action may affect a listed endangered or threatened species to insure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the federal agency after determining the action may affect a listed species; and (3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat.

SECTION 7(c) Biological Assessment-Major Construction Activity

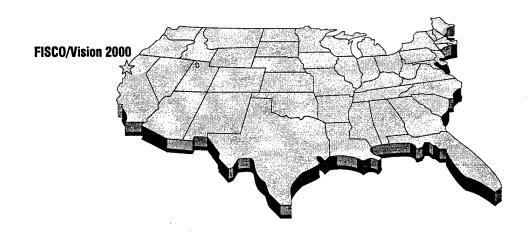
Requires federal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities. The BA analyzes the effects of the action on listed and proposed species. The process begins with a Federal agency requesting from FWS a list of proposed and listed threatened and endangered species. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the list, the accuracy of the species list should be informally verified with our Service. No irreversible commitments of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may proceed; however, no construction may begin.

We recommend the following for inclusion in the BA: an on-site inspection of the area affected by the proposal which may include a detailed survey of the area to determine if the species or suitable habitat are present; a review of literature and scientific date to determine species' distribution, habitat needs, and other biological requirement; interviews with experts, including those within FWS. State conservation departments, universities and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of indirect effects of the proposal on the species and its habitat; an analysis of alternative actions considered. The BA should document the results, including a discussion of study methods used, and problems encountered, and other relevant information. The BA should conclude whether or not a listed or proposed species will be affected. Upon completion, the BA should be forwarded to our office.

¹A construction project (or other undertaking having similar physical impacts) which is a major federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332(2)G).

^{2&#}x27;Effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action.

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APPENDIX I
THE PORT OF OAKLAND AND PORT TENANT
REGIONAL STORM WATER
POLLUTION PREVENTION PROGRAM
MARINE TERMINALS SUB-GROUP

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The Port of Oakland and Port Tenant Regional Storm Water Pollution Prevention Program

Marine Terminals Sub-Group

Prepared by The Port of Oakland Environmental Department

September 16, 1992

Revisions: June 18, 1993 and April 11, 1994

The Port of Oakland and Port Tenant

Regional Storm Water Pollution Prevention Program

Marine Terminals Sub-Group

Prepared by
The Port of Oakland
Environmental Department

September 16, 1992

Revisions: June 18, 1993 and April 11, 1994

The Port of Oakland and Port Tenant Regional Storm Water Pollution Prevention Program for the Marine Terminals Sub-Group has been prepared to satisfy the requirements of Section A of Water Quality Order 91-13-DEQ (as amended by Water Quality Order No. 92-12-DEQ), National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001. The present revision of this document and all attachments were prepared under my direction or supervision.

Jon Amdur

Environmental Department

Port of Oakland

1-4-45

Date

The Port of Oakland and Port Tenant Regional Storm Water Pollution Prevention Program

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Regional Storm Water Pollution Prevention Program Marine Terminals Sub-Group

I. Introduction

In 1987, amendments to the Clean Water Act (CWA) added section 402(p) which established a framework for regulating industrial and municipal storm water discharges under the National Pollutant Discharge Elimination System (NPDES). On November 16, 1990, the Environmental Protection Agency (EPA) published final regulations that established requirements for storm water discharge permits for specific categories of industrial facilities. These categories include shipping, trucking and air transport facilities that conduct vehicle maintenance, or facilities where materials are stored in exposed areas.

The regulations allow authorized states to issue general permits or individual permits to regulate industrial storm water discharge. The California State Water Resources Control Board (Board) has elected to issue a statewide General Industrial Discharge Permit (General Permit) that will cover all industrial discharges except construction activities. To be covered under the State's General Permit, dischargers were required to submit a Notice of Intent (NOI) with the appropriate fees to the Board by March 30, 1992. Port tenants with activities regulated under the General Permit submitted individual NOIs to the Board.

In order to help its tenants and others comply with the new regulations, the Port has organized a working Group (Group) to prepare a storm water monitoring program. The Port is also providing assistance to its tenants in the preparation of the required Storm Water Pollution Prevention Plans (SWPPP), as well as the application of Best Management Practices (BMP). The Group is divided into two sub-groups. The sub-group divisions are based on the members' Industrial Classification and the water body into which they discharge. The two sub-groups consist of the Airport Sub-Group and the Marine Terminals Sub-Group.

In a joint effort between the Port of Oakland and its tenants, a Regional Storm Water Pollution Prevention Plan (RSWPPP) has been developed. This RSWPPP addresses management plans and Best Management Practices (BMPs) that can be implemented uniformly throughout the Port region. Uniformity in management of potential sources of pollution will make compliance easier and can save money on implementation by combining programs. The BMPs have been designed to maximize the benefits and minimize the costs of implementation.

Although a series of "generic" BMPs have been compiled for this program (Appendix A), site-specific BMPs will depend on the type and extent of the activities conducted on site.

Each Port tenant will be furnished a copy of this plan. It is the tenant's responsibility to implement the plans. Additional 'Site-Specific' information will be supplied by the tenants and will be included in the appendix of the plans. Site-specific information includes:

- 1. Hazardous Materials Business Plans, which include a list of all the hazardous materials and the approximate amounts used on site. The Hazardous Materials Business Plans are to be prepared in conformance with Chapter 6.95, Section 25504, of the California Health & Safety Code. Section 25504 requires: (1) an inventory of all hazardous substances or chemical products handled by the business; (2) emergency response plans and procedures to be implemented in the event of release of a hazardous material; and (3) provisions to train all employees in safety procedures to be implemented in the event of a release, or threatened release, of hazardous material. The inventory is to contain sufficient information on how and where the hazardous materials are handled.
- 2. A site map showing the site boundaries, buildings, storm drains, fueling facilities, maintenance areas, vehicle washing areas, grease trap locations, and any other pertinent information.
- 3. Spill Prevention Control and Countermeasure (SPCC) plans.
- 4. Records of hazardous materials spills and disposal since 1988 (a good faith effort is expected in recording previous spills and disposal). In addition, maintain records of all employee training related to hazardous materials, spill response, and storm water education.
- 5. Descriptions of material loading, unloading and access areas (including hazardous waste/materials storage areas), existing structural and non-structural control measures (if any), methods of on-site storage and disposal of significant materials, and outdoor storage, manufacturing, and processing of materials.

This component of the RSWPPP covers the Marine Terminals Sub-Group (MTSG). Members of the MTSG are Port of Oakland industrial tenants whose major SIC codes consist of marine terminal operations, trucking and related services (Appendix B); activities in the MTSG are covered by SIC codes 3273, 3799, 4190, 4214, 4412, 4424, 4463, 4491, 4731, 4783; these tenants have submitted individual NOIs to the Board. Storm water from the MTSG members often combines with outside storm water sources and flows into the City of Oakland's storm drain system, which is connected in numerous locations with the Oakland Estuary and San Francisco Bay (Figure 1).

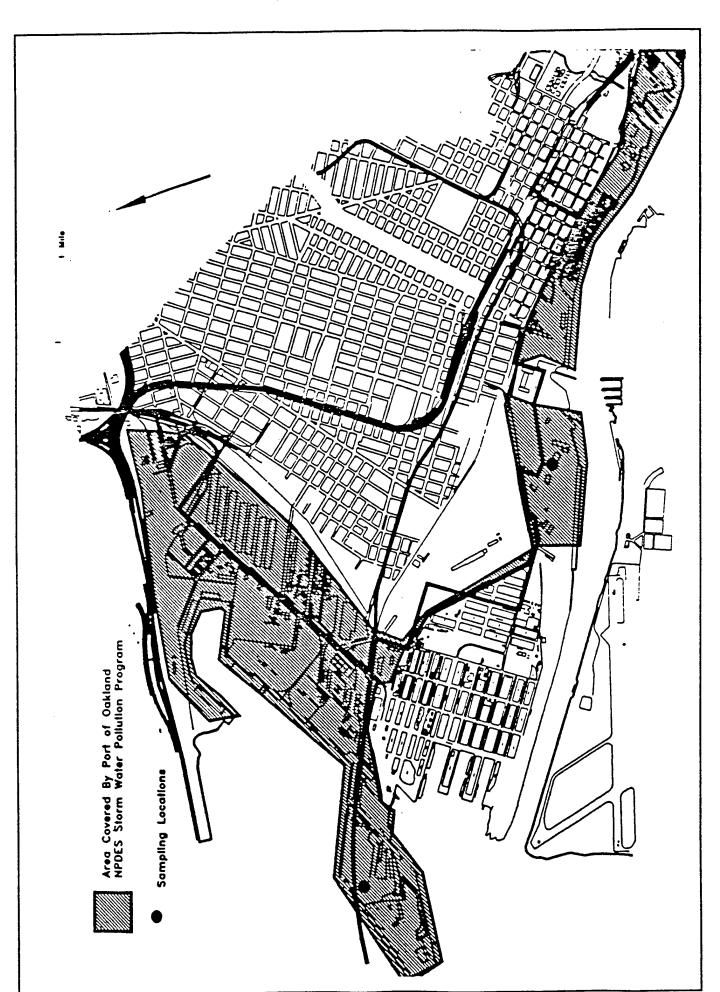


Figure 1: Marine Terminals Area

II. General Approach

Many of the management practices included in this plan are based on BMPs that have been shown to successfully reduce pollutant loads throughout the country. Others have been modified to suit the specific needs of marine terminal operations. The general premise for BMPs is common sense and awareness. The basic approach is as follows:

- 1. Do not allow any discharge to the storm sewer other than rainwater.
- When possible, reduce the amount of hazardous substances used at the site.
- 3. Do as much vehicle maintenance work as possible indoors.
- 4. Store all hazardous substances properly and dispose of all hazardous wastes in accordance with all State, local, and Federal regulations.
- 5. If the facility does not currently have one, prepare a Hazardous Materials Business Plan and a Spill Prevention Control and Countermeasure (SPCC) plan. These plans are required under existing legislation (California Health and Safety Code Chapter 6.95, Section 25500, California Code of Regulations (CCR) Title 22, Section 67120 to 67126 and 67140 to 67145 and Title 40 Code of Federal Regulations (CFR) Part 112). However, SPCC plans are not required if the facility does not handle hazardous wastes and the underground buried storage capacity is 42,000 gallons or less of oil, and the storage capacity, which is not buried, of the facility is 1,320 gallons or less of oil, provided no single container has a capacity in excess of 660 gallons (40 CFR 112.1(d)(2)).
- 6. Maintain records of all employee training, hazardous materials disposal, and spills.
- 7. Use good housekeeping practices.

III. Facilities Upgrades and Capital Expenditures

In a number of instances, facility upgrades will be beneficial in reducing pollutant loads to the Bay, and generally make permit compliance and maintenance easier on the permittee. Low-cost structural modifications, such as low berms around storm drains to collect sediment and to prevent the direct discharge of spilled material to the storm sewer system, could be constructed in the near future.

Other modifications such as hazardous materials storage areas can be expensive to design and construct and would require budgeting. Decisions should be made as to which upgrades would be most beneficial for each facility, and scheduling of the upgrades should be completed and adhered to. In most cases, the tenant will be responsible for facility upgrades.

All upgrade plans should be reviewed and permitted by the Port of Oakland Engineering Department prior to construction. Low-cost items such as tarps, spill prevention equipment, and inexpensive secondary containments, should be purchased as soon as possible.

IV. Facility Maintenance

Standard Port/Tenant lease agreements contain a clause that requires the tenant to maintain the facility. In addition, the agreement stipulates that the tenant must abide by all local, State, and Federal laws and regulations. It is therefore the tenants' responsibility to conduct all maintenance activities associated with the storm drain permit. If a tenant wishes to have the Port maintain the storm drain system as outlined in the RSWPPP, an agreement can be reached that will allow Port maintenance of the drains, with the associated costs passed on to the tenant.

V. Designated Personnel

Each permittee should designate an individual who will be responsible for NPDES permit compliance (Storm Water Compliance Coordinator). This person must have authority to act on the permit requirements and should be fully versed on the NPDES permit and the RSWPPP. Other personnel should be appointed as an alternate and should also have authority to act on NPDES issues.

In many instances, it is beneficial to have a Storm Water Coordination Committee to review current practices and to help in the modification of work habits. The Coordination Committee should consist of the compliance coordinator, the alternate coordinator, supervisors and staff who are expected to perform the BMPs daily. The Coordination Committee may need to meet only once or twice per year, although more frequent meetings are encouraged.

The designated responsible party for each tenant in the Group SWPPP is included in the list of tenants in Appendix B.

VI. Inspections

Annual inspections will be performed by Port personnel to ensure that all members within the group are in compliance with the SWPPP. The Port will conduct these inspections in addition to the regular inspections that are to be conducted by the main storm water

supervisor at each Port tenant activity. The Port inspector(s) are to complete written documentation of the inspections (audit checklists) for each visit and keep the documentation for at least five years.

Appendix A

Generic Storm Water Pollution Prevention Plans

Best Management Practices for Vehicle Service Facilities

Generic Storm Water Pollution Prevention Plans Best Management Practices for Vehicle Service Facilities

1. Storm Drains

Applicable Rule: Storm Drain Protection

Storm drains are designed to carry ONLY rainwater runoff. All other discharges are prohibited. This prohibition includes any fluid from vehicles including fuel, oil, grease, degreasing solutions, coolants, and rinse water from vehicle washing.

- a: Never pour any vehicle fluid into the storm drain system.
- b: Recycle vehicle fluids and all hazardous materials.
- c: If recycling is not possible, all wastes should be properly disposed of as required by State and Federal Regulations (disposal of hazardous materials is covered in the tenant's Hazardous Materials Business Plan).
- d: Where possible, waste reduction/waste minimization plans will be implemented to reduce the generation of potential pollutants.
- e: Prevent the accidental discharge of vehicle fluids or hazardous materials into both the storm sewer and the sanitary sewer systems. Methods for preventing these discharges are covered under Section 2 (Spill Response) and Section 8 (Secondary Containment of Hazardous Substances).
- f: General procedures for the prevention of discharges to the storm and sanitary sewer systems include:
 - In all circumstances where the facility is large enough to accommodate the
 equipment requiring maintenance, vehicle maintenance work will be performed
 inside or under covered structures.
 - For equipment that cannot be serviced under covered areas, all maintenance will be
 performed with drip pans or non-permeable tarps under the equipment. In
 addition, where adequate space exists, a bermed area can be constructed that will
 accommodate the vehicle requiring service. Any spills within the bermed area will
 be promptly cleaned up in accordance with procedures outlined in Section 2.

- During dry weather, storm drains can be protected using rubber or plastic mats to seal the drains. In addition, low berms can be constructed upstream of the storm drains.
- g: Train all employees on procedures to reduce storm water pollution.
- h: Label all storm sewer drains STORM DRAIN: STORM WATER DISCHARGE ONLY. Alternately, reiterate storm water runoff awareness during training and safety meetings.
- i: Clean the storm drain catch basins once a year prior to the rainy season. This should be done in the following manner:
 - 1. Inspect the basin for any sheen or petroleum odors.
 - Maintain a record of all storm drain inspections (see enclosed forms).
 - 2. If a sheen or petroleum odor is detected on the standing water or the sediment, you should:
 - Have a certified analytical laboratory test the water and sediment prior to cleaning.
 - If hazardous levels of contamination are detected, contract with a hazardous materials disposal firm for removal.
 - If non-hazardous levels of contamination are found, disposal must be appropriate for the level of contamination.
 - 3. If no sheen or odor is detected, clean out the basin by removing all debris that is accessible (NOTE: DO NOT FLUSH THE SYSTEM WITH WATER).

2. Spill Response

Applicable Rule: Storm Drain Protection

Storm drains are designed to carry ONLY rainwater runoff. All other discharges are prohibited. This prohibition includes any fluid from vehicles including fuel, oil, grease, degreasing solutions, and coolants. Spill response plans will be created for each facility that handles hazardous substances.

Compliance:

a: All spills, both large and small, must be cleaned up immediately. Any employee involved in spill response must be trained in the proper method of responding.

Training must include education on personal safety and methods of handling the materials safely (hazardous materials procedures training). The safety of the employee is the first concern. Proper equipment for spill response for each type of material, solvents, acids, etc., must be provided and must be readily available to the trained employee.

- b: All absorbent material and disposable personal protective gear must be disposed of in accordance with all State and Federal laws.
- c: If <u>reportable quantities</u> are spilled on site, notification will be made to the appropriate agencies as soon as possible. Depending on the material spilled and whether it enters the Waters of the State, notification will be made to the Oakland Fire Department, Regional Water Quality Control Board, U.S. Coast Guard, the Port of Oakland, California Department of Fish and Game, and any additional contractors required in order to control and clean up the spill. Site-specific spill response plans and phone numbers can be found in the Appendix. <u>-(to be prepared by tenants)-</u>

3. Sanitary Sewers

Applicable Rule:

<u>Permit Requirements Under East Bay</u> <u>Municipal Utility District (EBMUD)</u>

EBMUD is responsible for the treatment and discharge of sanitary waste water only. EBMUD does not have the ability to treat non-permitted industrial wastes, nor can they treat storm water runoff. The discharge of any waste chemicals, process water, or storm water to the sanitary sewer system is strictly prohibited. The discharge of any substance other than sanitary wastes must be permitted by EBMUD.

- a: Never dispose of any vehicle fluids, cleaning solvents, or other hazardous substances into the sanitary sewer system.
- b: Recycle vehicle fluids and all hazardous materials.
- c: If recycling is not possible, all wastes should be properly disposed of as required by all State and Federal regulations.
- d: Permanently seal all floor drains connected to the sanitary sewer system within vehicle maintenance areas.
- e: Use only biodegradable detergents in vehicle wash areas (See Section 9).

- f. Do not steam clean engines except in areas that are covered, bermed, and have drainage to the sanitary sewer system through an approved grease trap (See Section 9).
- g: Set up a preventative maintenance schedule for the inspection, cleaning, and proper disposal of all grease trap wastes.

4. Floor Drains

Applicable Rule:

Permit Requirements Under East Bay Municipal Utility District (EBMUD)

EBMUD prohibits the discharge of fluids from vehicle maintenance areas without a permit. Permits may be available for treated discharges to the sanitary sewer system. EBMUD requires that all non-permitted drains within vehicle maintenance areas must be permanently sealed.

- a: Permanently plug all floor drains within vehicle maintenance work areas, OR contact EBMUD to obtain a permit to discharge to the sanitary sewer system. (Port of Oakland tenants must notify the Port Building Permit Department prior to modifying any plumbing).
- b: Clean floors in the following manner:
 - Clean all spills using absorbent material such as sawdust or cat litter.
 - Sweep the floor using absorbent material. Reuse this material for numerous cleanings or for spill cleanup.
 - Mop the floor using biodegradable detergent and dispose of rinse water into sink.
- c: Recycle vehicle fluids and all hazardous materials.
- d: If recycling is not possible, all wastes should be properly disposed of as required by all State and Federal regulations.
- e: Clean all vehicle parts in approved containment/recycling system (see section 5, Parts Cleaning).
- f: Clean up all spills immediately (see section 2, Spill Response).

5. Parts Cleaning

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Solvents used to clean parts are regulated under State and Federal laws. The discharge of solvents to Waters of the State (surface water or ground water) is a direct violation of the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and other laws. Solvents must be used and stored in a manner to eliminate discharges to water, soil, or air. Used non-solvent cleaners should be disposed of as waste to prevent the discharge of grease, oil, and metals to the environment.

Compliance:

- a: Implement a waste minimization program if possible. By reducing the amount of solvents and degreasers used, it is possible to save money and reduce the possibility of discharges to the environment.
- b: Use self-contained parts washers, which include a storage drum, collection basins, solvent sprayers, splash guards (and in some cases, fume hoods). These washers are leased by companies that will pick up spent solvents and deliver fresh solvents.
- c: All parts should be cleaned in one area set aside for this purpose. This area should be away from any storm sewer and sanitary sewer drains.
- d: It may be practical for companies that use large volumes of solvents to treat the solvent on site for reuse. Concentrated waste water from the recycling process should be tested and disposed of in accordance with all applicable rules and regulations. (On-site recyclers may be subject to California Environmental Protection Agency (Cal EPA) Permit-by-Rule regulations.)

6. Changing Vehicle Fluids

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system.

Compliance:

a: All vehicle fluid changing should be conducted inside when possible.

- b: When circumstances prevent indoor maintenance (e.g., the maintenance of large equipment), non-permeable tarps or drip pans should be used.
- c: Special outdoor maintenance areas can be constructed which slope away from storm drains and into containment areas to facilitate cleanup in the event of a fluid spill.
- d: Purchase or fabricate fluid transfer equipment (e.g., oversized drip pans, drain caddies with funnels and pumps, or pump extraction equipment) that will reduce the chance of spills during transfer. The equipment selected should be specific for the site and need.
- e: Place spill response equipment nearby when transferring fluids.
- f. Depressurize all pressurized fluid systems (e.g., hydraulic systems or pressurized coolant systems) prior to beginning any repair work.

7. Leaking Vehicles

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system.

- a: Place drip pans under leaking vehicles and restrict use until vehicle is repaired.
- b: Designate parking spaces for all equipment so sources of leaking equipment can be determined.
- c: Promptly clean up any spilled fluids.
- d: Repair leaking equipment within 24 hours of leak detection (except when parts are not available).

8. Secondary Containment of Hazardous Materials

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system. Secondary containment of waste fluids and proper storage of chemical supplies will help reduce the chance of discharges to the environment. State and Federal laws require secondary containment for storage of hazardous wastes, used oil, or hazardous materials stored in USTs, as well as the preparation of Spill Prevention Control and Countermeasure (SPCC) plans if (1) hazardous wastes are stored or (2) if oil is stored and any of the following three conditions are met: the underground buried storage capacity of the facility is greater than 42,000 gallons of oil; the storage capacity, which is not buried, is greater than 1,320 gallons of oil; or a single aboveground container has a capacity in excess of 660 gallons.

Secondary containment should be provided for used batteries. Used batteries should be placed in plastic containers until the batteries can be picked up by a battery service. New batteries should be stored in an earthquake-safe manner (i.e., stored away from the edge of shelves, use shelves equipped with restraining straps, etc.). New or used batteries should never be stored outside.

- a: Purchase appropriate secondary containment for the amount of waste or stock chemicals stored on site. Secondary containment equipment comes in many designs. An inexpensive system (used by the Port of Oakland) consists of a polyethylene tub capable of holding four 55-gallon barrels. The tub has a sliding cover to allow outdoor storage. Other systems consist of steel pallets with containment or even specialized storage sheds with containment floors, material dispensers, ventilation, lighting, ramps, and fire suppression equipment. When purchasing secondary containment, follow these rules:
 - The containment must hold 110% of the material in one container (if all are the same size), 150% of the volume of the largest container, or 10% of the total volume of all the containers within the containment.
 - Make sure that the material that the containment is made of is compatible with the stored wastes (e.g., acids, solvents etc.)
 - Allow for proper ventilation.

- b: An alternative to pre-fabricated containments is to construct a containment area using impermeable materials and berms (asphalt or concrete are acceptable if there are no cracks). The area and berms should be designed to hold 10% of the maximum amount of material that could be stored within the area. If this area is constructed outside, the containment area should have a roof to prevent the containment from filling with rain water.
- c: Any spills within the secondary containment should be cleaned up promptly. NOTE: OVERPACK DRUMS ARE NOT SECONDARY CONTAINMENT.
- 9. Vehicle Washing and Steam Cleaning

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle wash water is not to be discharged to the storm sewer system. Wash water may be discharged to the sanitary sewer under the conditions outlined below.

Compliance:

- a: Never discharge vehicle exterior, undercarriage, or engine wash water or steam cleaning residues to the storm sewer system.
- b: Where possible, construct a vehicle washing area that can recycle wash water or can discharge wash water to the sanitary system under approved conditions:
 - Use only biodegradable detergents.
 - Ensure that no storm water can enter the sanitary sewer drainage system.
 - Steam clean only if there is:
 - 1. A grease trap attached to the sanitary sewer drainage system, OR
 - 2. No solvents are used as part of the steam cleaning process.

In addition:

- 3. The discharge must be approved by EBMUD, OR
- 4. The discharge must drain into a holding tank and be disposed of as wastes instead of to the sanitary system.

- c: Contract with a vehicle washing service that can recycle wash water or will dispose of wash water in an approved manner.
- d: Rinsing of vehicle exteriors WITH WATER ONLY for appearances IS PERMITTED for discharge to storm sewers.
- e: NOTE: Steam-cleaning wastes, or rinse water using degreasers often have high levels of hydrocarbon residues and metals. Engine and undercarriage rinse water may be considered a hazardous waste. Testing of rinse water may be required by State and Local regulators.

10. Vehicle Fueling

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle fueling must be done in a manner to reduce spills and discharges to the storm and sanitary sewer systems.

- a: Operating instructions shall be posted at each fueling facility with emergency phone numbers.
- b: An attendant will always be present during any fueling or fuel transferring operations.
- c: Topping off is strictly prohibited.
- d: Fuel will not be stored in buckets, open drums, or any other open containers.
- e: Follow all procedures as outlined in the Underground Storage Tank Operating Permit Application and Monitoring, Spill Prevention and Emergency Response Plan. All Port of Oakland tenants with Port-owned tanks have a copy for their facility (See Appendix B).
- f: Spill cleanup equipment will be located near the fueling facility and be readily available to trained personnel (See Section 2).
- g: Only trained personnel shall operate mobile fueling facilities (tank trucks), and spill response equipment will be maintained on all mobile fueling sources.
- h: A low berm can be constructed around any storm drains within the watershed that drains the fueling area.

Maintaining Records

Applicable Rule:

Requirement Under General Industrial Storm Water NPDES Permit and the California Code of Regulations

Records of all employee training, storm sewer inspections, hazardous waste disposal, site spills, and storm sewer maintenance cleaning (yearly) must be kept on-site.

- a: Maintain records of all employee training including:
 - Hazardous Materials awareness training
 - Spill cleanup procedures
 - Storm water pollution education
- b: Maintain records of storm sewer inspections (see attached forms). Storm sewers should be visually inspected at least once per month for dry season discharges, oil sheen, or petroleum odors.
- c: Maintain records of the yearly storm sewer cleaning including:
 - 1. What material was removed (sediment, plastic, etc.).
 - 2. Was the material contaminated, and if so, what was the contaminant?
 - 3. What was the final disposition of any contaminated material?
- d: Maintain a record and disposal manifests for all hazardous waste disposal
- e: Maintain a record of all spills that occur outside. Small spills (a few gallons) or leaking vehicles do not need to be logged as long as they are promptly cleaned. Spill logs should include:
 - 1. What was spilled and approximately how much.
 - 2. What was done to respond and who was notified.

PORT OF OAKLAND

INSPECTION REPORT VEHICLE SERVICE FACILITIES

Inspec	ted By:	Date:	
	t Representative ture:	Title:	
GENE	RAL INFORMATION		
2. 3. 4.	FACILITY ADDRESS: MAILING ADDRESS (IF DIFFERE CONTACT PERSON: TITLE: PHONE NUMBER:	ENT):	
	SUBCATEGORIES: general repair: radiator repair: dip washing: engine cleaning: body repair: fleet operations:	fuel dispensing: exterior vehicle washing: machining: salvage/wrecking: painting:	

SITE-SPECIFIC REQUIREMENTS FOR VEHICLE SERVICE FACILITIES

The following is a list of site-specific requirements as described on page 2 of the Port of Oakland Group Storm Water Pollution Prevention Program. Circle the appropriate response (Yes, No, N/A) and add comments as necessary.

Yes	No	N/A	Does the facility have a Hazardous Materials Business Plan that includes a list hazardous materials and the approximate amounts used on-site?
. SIT	E MA	P	
Yes	. No	N/A	Does the facility have a site map, including the following information:
	No		site houndaries:
	s No		all buildings:
	s No		all storm drains:
-	s No		all fueling facilities:
	s No		all maintenance areas:
	s No		all vehicle washing areas:
		N/A	all grease trap locations:
		N/A	any other pertinent information:
		REVEN	If an SPCC plan is required, has one been prepared?
4. R	ECOR	DS OF	SPILLED MATERIALS AND TRAINING
v	es No	N/A	
. 1		o N/A	Have records been maintained regarding employee training on hazardous m spill response, and storm water education? See also Maintaining Records in

GENERIC REQUIREMENTS FOR VEHICLE SERVICE FACILITIES

The following are generic requirements as described on pages 5 through 15 of the Port of Oakland Group Storm Water Pollution Prevention Program for vehicle service facilities. Circle the appropriate response (yes, no, N/A) and add comments as necessary.

STO	RM I	DRAII	N PROTECTION (PAGES 5 AND 6)
Yes Yes			Is there dry weather protection? Is the area around the storm drain free from evidence of recent spills or staining?
\	N 7	BT/A	Are all storm drains labeled?
Yes Yes			Are all storm drains labeled:
. SPIL	L RI	ESPON	NSE (PAGES 6 and 7)
Vac	No	N/A	Is a spill response plan in place? If no, when?
_		N/A	Have all reportable spilled quantities been properly documented (as per the spin
Yes	No	N/A	A sills shound up immediately?
Yes	No	N/A	Is proper spill response equipment present?
Yes	No	N/A	Is spill response equipment easily accessible in work and a second secon
		ARY SI N/A	
Yes	No	N/A	the second secon
4. FL(OOR	DRA	INS (PAGES 8 and 9)
Yes	No	N/A	Are all floor drains within the maintenance area(s) plugged?
Yes	No	N/A	Has a permit been obtained for any unplugged floor drains?
Yes	No	N/A	Are proper floor cleaning methods as per the SWPPP used (i.e., swept then mopped)?

5.	PAR	TSC	LEAN	ING (PAGE 9)
		- ·	21/4	Is a waste minimization program in place?
			N/A	Is a self-contained parts washer present? Describe
	Yes	No	N/A	
	.,	. .	N7/A	1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	Yes	No	N/A	is the parts washer rocards as a
_	CII	ANIC	INIC V	EHICLE FLUIDS (PAGE 10)
0.	CHA	AING	ING V	
	N /	N 1-	BT/A	Is fluid changing conducted inside? If no, where?
	res	NO	N/A	
			D7/A	Are drip pans used if outdoor fluid changes are required?
			N/A	Is the fluid transfer equipment designed to reduce the chance of spills during transfer
	Yes	No	N/A	to recycling or disposal containers?
				Are all pressurized fluid systems de-pressurized prior to beginning work?
	Yes	No	N/A	Are all pressurized fluid systems de-pressurized prior to beganning week
7.	LEA	KIN	IG VEH	HICLES (PAGES 10 and 11)
				and the state of the same?
	Yes	No	N/A	Do leaking vehicles/equipment have drip pans?
				1 to 11 which a facility of the month?
	Yes	No	N/A	Have parking spaces been designated for all vehicles/equipment?
	Yes	No	N/A	Are leaking vehicles/equipment repaired within 24 hours?
8	. SEC	CON	DARY	CONTAINMENT OF HAZARDOUS MATERIALS (PAGES 11 and 12)
	Yes	No	N/A	Has a Spill Prevention Control and Countermeasures Plan been prepared for
				aboveground storage areas with a capacity of more than 660 gallons in a single
				container or 1,320 gallons in combined containers of fuels?
	Voc	No	N/A	Is the secondary containment adequate to contain 110% of one container (if all
	163	140	INIA	containers are alike) or 150% of the volume of the largest container?
				Collidations are unally so and
	3/	NT.	NT/A	Is the secondary containment material compatible with the stored wastes?
	res	1/10	N/A	15 the secondary comments of
	•		NT/A	Are only compatible materials stored together?
	Yes	NC	N/A	Me only companie materials stores to be a second se
		••	27/4	Is the secondary containment in good condition?
	Yes			Is the secondary containment properly covered?
	Yes			t the state of the
	Yes	No	N/A	Does the secondary containment area have adequate ventiladori

9.	VEHICLE	WASHING	AND STEA	M CLEANING	G (PAGES 12 and 13)
----	----------------	---------	-----------------	------------	---------------------

Yes	No	N/A	Is vehicle washing done on-site?
		N/A	Are only biodegradable soaps or water only used?
		N/A	Is equipment/engine steam cleaning done on-site?
		N/A	Is the wash area approved and permitted?
		N/A	Does the wash area have an approved sump?
		N/A	Is the wash area drain secure from the entry of storm water?

10. VEHICLE FUELING (PAGES 13 and 14)

Yes	No	N/A	Are proper operating instructions posted at the fueling facility?
Yes	No	N/A	Is an attendant always present during fueling activities?
Yes	No	N/A	Is fuel being stored properly (i.e., not in buckets, drums or open containers)?
Yes	No	N/A	Is spill cleanup equipment located next to the fueling area?
Yes	No	N/A	For mobile fueling activities, are only trained personnel operating the refueling equipment?

11. MAINTAINING RECORDS (PAGES 14 and 15)

Yes	No	N/A	Have employee training records been maintained? including the following:
Yes	No	N/A	Hazardous materials awareness training?
Yes	No	N/A	Spill cleanup procedures?
		N/A	Storm water pollution prevention education?
		N/A	Have records of storm drain inspections been maintained?
		N/A	Have records of yearly storm drain clean-out been maintained? including the
			following:
Yes	No	N/A	Wastes removed?
		N/A	If the waste was contaminated, was the waste disposed of properly?
Yes	No	N/A	Have all hazardous waste manifests been retained?
-		N/A	Have all spills been recorded (including the following information?):
		N/A	Material spilled and how much?
			What was done to respond and who was notified?
Yes	NO	N/A	What was done to respond and who was nothed.

ADDITIONAL COMMENTS:
·

PORT OF OAKLAND INSPECTION REPORT (OPTIONAL*)

CLEANING ACTIVITIES	S				
Activity	Number	Type of cleaning material used (e.g., water, steam, solvent, heat,	Waste Handling (e.g., sanitary sewer, shipped for	Sewer Use Permit?	Comments
·		dry abrasives, alkali cleaner, etc.)	disposal, recycled, on-site reuse, etc.)	Yes / No / NA	
I. Parts Cleaning	Units				
a. Sink(s) (e.g., solvent)					
b. Spray cans					
c. Hot tank(s)					
d. Steam cleaner(s)					
e. Jet sprayer(s)					
f. Mechanical cleaning					
g. other					
h. other					
i. other					
II. Engine/Undercarriage	#/day				
a. Engines					
b. Undercarriages					
III. Vehicle Washing	Veh./day				

^{*} Optional information sheet to be used at the discretion of the Port auditing personnel

PORT OF OAKLAND INSPECTION REPORT (OPTIONAL*)

OTHER ACTIVITIES				
	Activity	Waste Handling	Sewer Use	
Activity	present	(e.g., sanitary sewer, shipped for disposal,	Permit?	Comments
			Yes / No / NA	
I. Fluid removal/replacement				
a. Radiator fluid				
b. Motor oil				
c. Transmission fluid				
d. Hydraulic fluid				
e. Differential lubricant				
f. Refrigerant				
II. Radiator Repair				
a. Boil out tank				
b. Flush booth waste				
c. Test tank waste				
d . Other				
III. Battery Replacement				
IV. Body shop waste				
a. Thinner/Paint				
b. Other				
c. Other				
V. Machining				
VI. Wrecking/Salvaging				
VII. Other				

^{*}Optional information sheet to be used at the discretion of the Port auditing personnel

Appendix B

Tenants in the Port of Oakland

Marine Terminals Sub-Group

Tenants in the Port of Oakland Marine Terminals Sub-Group

Note: SIC Codes, Industrial Activities, and designated responsible parties for these facilities were provided with letters to the Port confirming intent to participate in the Group Storm Water Pollution Prevention Plan.

American President Lines 1395 Middle Harbor Road Oakland, CA 94607 Mark Yamamoto (510) 272-3921 SIC Code 4412 Vehicle Maintenance and Storage

Berkeley/Oakland Ready Mix Company 491 Embarcadero Oakland, CA 94606 Robert Branstad Manager (510) 526-1611 SIC Code 3273 Manufacturing Vehicle Maintenance

International Transportation Services, Inc.
TransBay Container Terminal, Inc.
707 Ferry Street
Oakland, CA
Bill Walker
Supervisor, Safety & Loss Control
(510) 839-8228

SIC Codes 3799, 4491 Vehicle Maintenance

Keep on Trucking 370 8th Avenue Oakland, CA Richard Padovani Terminal Manager (510) 893-6011 SIC Code 4214 Vehicle Maintenance Material Handling

Maersk Line Terminal 909 & 700 Ferry Street Oakland, CA Nick J. La Rocco Marine Operations Superintendent (510) 835-7500 SIC Codes 4412, 4424, 4491 Material Handling Marine Terminals Corporation Seventh Street Public Container Terminal 90 Seventh Street Oakland, CA Bruce Elerick, R.E.A. Manager, Safety & Security (510) 645-1458 SIC Code 4491 Vehicle Maintenance, Stevedoring

Matson Terminals, Inc.SIC Code 4463
Oakland Terminal
3050 Seventh Street
Oakland, CA
G. N. Garvey
F&M Manager
(510) 271-9826

Material Storage and Handling Vehicle Maintenance

Military Traffic Management Command Western Area Oakland Army Base Oakland, CA Glenna M. Eiermann Environmental Engineer (510) 466-2293 SIC Codes 4491, 4731, 4783 Material Storage and Handling Vehicle Maintenance and Storage

Sea Land Services, Inc. SIC Codes 4412, 4424 1425 Maritime Street Oakland, CA Shirley Kennedy Loss Prevention & Safety Supervisor (510) 271-1294

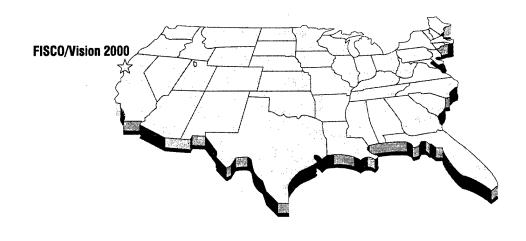
Vehicle Maintenance Material Handling

Stevedoring Services of America Howard Container Terminal 1 Market Street Oakland, CA Sandi Lira (510) 238-4400 SIC Code 4190 Vehicle Maintenance Stevedoring Services of America Berth 23 1195 Maritime Street Oakland, CA 94607 Jacques Lira Terminal Manager (510) 419-1800

SIC Code 4190 Vehicle Maintenance

Trans Pacific Container Service Corporation 5100 Seventh Street Oakland, CA Terry W. Murphey Maintenance & Repair Manager (510) 834-0680

SIC Codes 4412, 4424 Material Handling and Storage Vehicle Maintenance and Storage This page left intentionally blank.



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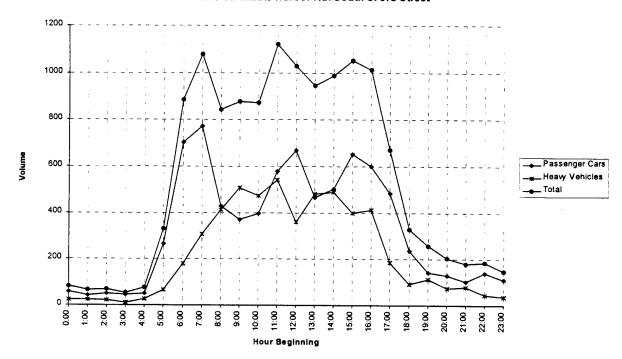
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Appendix J.1 Existing Traffic Data

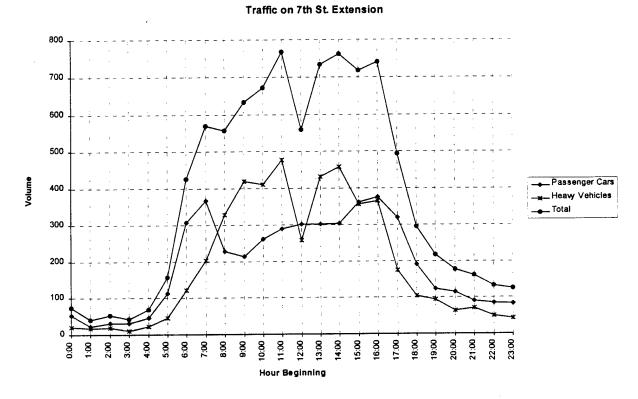
Figure J.1-1

Traffic on Middle Harbor Rd. South of 3rd Street



Traffic counts collected on June 6, 1996, by Wiltec.

Figure J.1-2



Traffic counts collected on June 6, 1996, by Wiltec.

FISCO/Port Vision 2000 EIS/EIR

Employment for Lease Areas 4 & 5

Table J.1-1

Total FISCO Percent in FISCO Employment in Tennant Employment Lease L.A. 4 & 5 1990 1996 Areas 4 & 5 1990 1996 AFGE 100% Coast Guard 100% 1 Combat Log Gru 1 96 41 100% 96 41 DDOC 571 90% 514 DECA 62 4 100% 62 **DFAS** 0 183 100% 0 183 DISA 0 100% 0 **DPSDO** 38 21 100% 38 21 **FAADCPAC** 100% Federal Credit Union 10 6 100% 10 6 FISC 780 290 100% 780 290 ISSOT 10 8 40% 3 **JMSDF** 100% MSCPAC 455 442 95% 432 420 NAVMTO 6 0 100% 6 Ó 2 NAVSEA 0 0% 0 0 Navy Audit 1 0 100% Navy Exchange 5 3 5 100% NCIS 9 0 100% 9 NEX Fit Asst Team 0 0 0% 0 NRPEO 42 54 100% 42 54 NTCC 37 20 100% 37 20 Post Office 100% **PWCSFB** 976 290 90% 878 261 ROICC 0 16 100% 0 16 VOA 156 73 50% 78 37 USNS A.J. Higgins* 117 58 100% 117 58 USNS Kawishiwi* 63 127 100% 127 **63**l USNS Mercy* 106 52 100% 106 52 USNS Observation* 60 30 100% 60 30 USS Kansas City* 479 236 100% 479 236 USS Wichita* 479 236 100% 479 236 USS class* 479 236

100%

100%

479

479

5,327

236

236

2,522

SOURCES: Personnel Data from Marty Wolf of Radian International, Sacramento, and Ed Guldner of FISCO on June 19, 1996.

236

2,614

479

5,591

USS class*

TOTAL

^{* 1996} employment per ship in port was based on average reductions for all ships served.

FISCO/Port Vision 2000 EIS/EIR Trip Generation for FISCO

Table J.1-2

FISCO Access	Employees	Al	M Peak Ho	ur	Р	M Peak Ho	
Location		In	Out	Total	ln	Out	Total
Maritime/7th Extension							
Non-Truck Traffic		522	111	633	117	319	436
Middle Harbor/Gate 2							
Total Traffic		414	128		261	449	1
% Non-Trucks		87%	43%		23%	78%	: :
Non-Truck Traffic		360	55		60	350	
Total Non-Truck Traffic		882	166	1,048	177	669	846
Employees							
FISCO							
Lease Areas 1, 2, & 3	92						
Lease Areas 4 & 5	2,522						
Total	2,614						
Port - Lease Areas 1-3	<u>500</u>						
Total Employees	3,114						
Trips per Employee		0.28	0.05	0.33	0.06	0.21	0.27
ITE Trip Generation							
Military Base (ITE 501)		-	-	0.39	-	-	0.39

Table J.1-3

FISCO/Port Vision 2000 EIS/EIR VEHICLE TYPES GATE 2 - FISCO ACCESS AT MIDDLE HARBOR ROAD

Hour			Inbound						Outboun	d		
Beginning	Cars,	Single Unit	Single	Multi-	Total	Total	Cars,	Single Unit	Single	Multi-	Total	Total
	Pickups &	Trucks &	Trailer	Trailer	Heavy		Pickups &	Trucks &	Trailer	Trailer	Heavy	İ
	Motorcycles	Buses	Trucks	Trucks	Vehicles		Motorcycles	Buses	Trucks	Trucks	Vehicles	
7:00	309	35	11	1	47	356	44	34	23	1	58	102
8:00	182	40	43	0	83	265	56	88	34	1	123	179
9:00	97	46	81	1	128	225	85	108	53	0	161	246
10:00	121	57	70	2	129	250	89	51	59	4	114	203
16:00	39	70	63	1	134	173	270	28	47	0	75	345

Traffic counts collected on June 6, 1996, by Wiltec.

Table J.1-4

FISCO/Port Vision 2000 EIS/EIR VEHICLE PERCENTAGES GATE 2 - FISCO ACCESS AT MIDDLE HARBOR ROAD

Period		Inbo	ound				Outb	ound		
	Cars,	Single Unit	Single	Multi-	Total	Cars,	Single Unit	Single	Multi-	Total
	Pickups &	Trucks &	Trailer	Trailer	Heavy	Pickups &	Trucks &	Trailer	Trailer	Heavy
	Motorcycles	Buses	Trucks	Trucks	Vehicles	Motorcycles	Buses	Trucks	Trucks	Vehicles
07:00 - 08:00	87%	10%	3%	0%	13%	43%	33%	23%	1%	57%
08:00 - 09:00	69%	15%	16%	0%	31%	31%	49%	19%	1%	69%
09:00 - 10:00	43%	20%	36%	0%	57%	35%	44%	22%	0%	65%
10:00 - 11:00	48%	23%	28%	1%	52%	44%	25%	29%	2%	56%
16:00 - 17:00	23%	40%	36%	1%	77%	78%	8%	14%	0%	22%

Traffic counts collected on June 6, 1996, by Wiltec.

Table J.1-5 FISCO Employee Trip Distribution

Location	Residency	Con	Commute Mode	de	Auto	Auto Trips	Trips	Route	%	of Emplo	yees Se	rved by	% of Employees Served by Each Route	ute
		Solo	Carpool	Other	Factor	Number	%		1-80 E.	.W 08-I	Rt. 24	1-880	1-580 E.	Local
		1.00	0.47	0.00										
N. Alameda (Oakland)	313	74.6%	8.6	12.4%	79.2%	248	34.1%							
S. Alameda (Hayward, Fremont	119	78.6%	14.3%	7.1%	85.3%	101	14.0%						14.0%	
E. Alameda (Pleasanton, Livermore)	10	80.0%	20.0%	%0.0	89.3%	တ	1.2%	1-580 E.					1.2%	
E. Contra Costa (I-680)	98	80.5%	15.9%	3.7%	87.9%	9/	10.4%	Rt. 24			10.4%			
W. Contra Costa (Richmond, I-80)	107	79.2%	17.0%	3.8%	87.1%	93	12.8%	I-80 E.	12.8%					
Santa Clara County	15	73.3%	26.7%	%0.0	85.8%	13	1.8%	1-880				1.8%		
San Francisco, San Mateo Counties	58	76.8%	7.1%	16.1%	80.1%	46	6.4%	I-80 W.		6.4%				
Marin and Sonoma Counties	14	100.0%	%0.0	%0.0	100.0%	14	1.9%	I-80 E.	1.9%					
Solano, Napa, Yolo, Sacto Counties	136	64.9%	33.6%	0.7%	80.6%	110	15.1%	I-80 E.	15.1%					
San Joaquin Valley & Outlying	17	87.5%	12.5%	0.0%	93.3%	16	2.2%	I-580 E.					2.2%	
Total	875					726	100.0%							
Oakland Details (from Truck Survey)														
Civic Center	11						1.2%	1-880				1.2%		
Dimond	15						1.7%	1-580 E.					1.7%	
Elmwood	72						8.1%	I-880				8.1%		
Fruitvale	69						7.7%	1-880				7.7%		
Grand Lake	က						0.3%	Local						0.3%
Laurel	4						0.4%	Local						0.4%
Mills College	2						0.2%	Local						0.2%
North Oakland	17						1.9%	Local						1.9%
San Antonio	7.1						7.9%	Local						7.9%
West Oakland	41						4.6%	Local						4.6%
Subtotal %	305						34.1%							
														L
Total %									30%	9%	10%	19%	19%	15%

SOURCES: Fleet & Industrial Supply Center (158-1) employee Transportation Servey Results (BAAQMD, 1994) Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, 1993).

Table J.1-6
Port of Oakland Employee Trip Distribution

Location	Resid	ency	Route	% c	of Employ	yees Se	rved by	Each Ro	ute
	Number	%		1-80 E.	I-80 W.	Rt. 24	1-880	I-580 E.	Local
Oakland (see details below)	369	27.4%							
Alameda	24	1.8%	Local						1.8%
Berkeley/Albany/Emeryville	22	1.6%	1-80 E.	1.6%					
San Leandro/San Lorenzo	89	6.6%	1-880				6.6%		İ
Piedmont	1	0.1%	1-580 E.					0.1%	·
Hayward/Castro Valley	116	8.6%	1-580 E.					8.6%	
Fremont/Newark	38	2.8%	I-880				2.8%		
Union City	23	1.7%					1.7%		
Dublin/Livermore/Pleasanton	13	1.0%	1-580 E.					1.0%	
San Pablo/Pinole/Rodeo	43	3.2%	1-80 E.	3.2%					
Richmond	45	3.3%	I-80 E.	3.3%					
El Cerrito	5	0.4%	I-80 E.	0.4%					į
Pittsburg/Antioch	28	2.1%	Rt. 24			2.1%			
Martinez/Concord	28	2.1%	Rt. 24			2.1%			
Walnut Creek/Orinda/Lafayette	8	0.6%	Rt. 24			0.6%			
Alamo/Danville/San Ramon	5	0.4%	Rt. 24			0.4%			
San Francisco	111	8.3%	1-80 W.		8.3%	İ			
San Francisco Longshore *	112	8.3%	1-80 W.		8.3%				
San Mateo County	80	5.9%	1-80 W.		5.9%				
Santa Clara County	67	5.0%	1-880				5.0%	}	
Marin County	15	1.1%	1-80 E.	1.1%					
Napa/Sonoma Counties	20	1.5%	I-80 E.	1.5%					
Solano County	83	6.2%	I-80 €.	6.2%					
Total	1345	100.0%							
Oakland Details									
Civic Center	11	1.0%	1-880				1.0%		
Dimond	15		1-580 E.					1.3%	
Elmwood	72	6.5%					6.5%		
Fruitvale	69	6.2%					6.2%		
Grand Lake	3	0.3%							0.3%
Laurel	4	0.4%							0.4%
Mills College	2	0.2%							0.2%
North Oakland	17	1.5%		1	1]			1.5%
San Antonio	71	6.4%							6.4%
West Oakland	41	3.7%		1					3.7%
Subtotal %	305	27.4%							
Total %		-		17%	23%	5%	30%	11%	14%
I VIAI 70	<u> </u>			1,70			U 0 70	1	, 0

^{*} Added to show the effects of longshore workers who must report to the union hall in San Francisco before going to the Port. (Half of longshore workers typically report to San Francisco).

SOURCES:

- 1. Truck Survey Marine Terminals and Railroad Intermodal Yards (Port of Oakland, 1993).
- 2. Port of Oakland Maritime Economic Impact Study (1990).
- 3. Meeting on June 14, 1996: Anne Whittington, Senior Port Strategic Planner (Economics), David Adams, Port Chief Warfinger, and Mark Bowman, Dowling Associates.

Table J.1-7
Truck Trips

Location	Resid		Inbo	und	Outbe	ound	Route
	Number	%	Number	%	Number	%	
Oakland (see details below)	369	22.1%	489	32.4%	403	29.0%	
Alameda	24	1.4%	5	0.3%	6	0.4%	Local
Berkeley/Albany/Emeryville	22	1.3%	7	0.5%	8	0.6%	1-80 E.
Lan Leandro/San Lorenzo	89	5.3%	55	3.6%	48	3.5%	I-880 S.
Piedmont	1	0.1%		0.0%	ļ	0.0%	Local
Hayward/Castro Valley	116	6.9%	52	3.5%	43	3.1%	I-880/238
Fremont/Newark	38	2.3%	22	1.5%	13	0.9%	I-880 S.
Union City	23	1.4%	18	1.2%	25	1.8%	I-880 S.
Dublin/Livermore/Pleasanton	13	0.8%	2	0.1%	3	0.2%	I-880/238
San Pablo/Pinole/Rodeo	43	2.6%	14	0.9%	3	0.2%	I-80 E.
Richmond	45	2.7%	117	7.8%	92	6.6%	I-80 E.
El Cerrito	5	0.3%		0.0%	i	0.0%	I-80 E.
Pittsburg/Antioch	28	1.7%	7	0.5%	12	0.9%	Rt. 24
Martinez/Concord	28	1.7%	12	0.8%	8	0.6%	Rt. 24
Walnut Creek/Orinda/Lafayette	8	0.5%		0.0%	i	0.0%	Rt. 24
Alamo/Danville/San Ramon	5	0.3%	4	0.3%	1	0.1%	Rt. 24
San Francisco	111	6.6%	89	5.9%	76	5.5%	1-80 W.
San Mateo County	80	4.8%	36	2.4%	21	1.5%	1-80 W.
Santa Clara County	67	4.0%	80	5.3%	56	4.0%	I-880 S.
Marin County	15	0.9%	4	0.3%	4	0.3%	1-80 E.
Napa/Sonoma Counties	20	1.2%	14	0.9%	20	1.4%	I-80 E.
Solano County	83	5.0%	38	2.5%	23	1.7%	I-80 E.
Sacramento Area		0.0%	100	6.6%	65	4.7%	I-80 E.
San Joaquin/Stanislaus		0.0%	127	8.4%	100	7.2%	I-880/238
Fresno/Merced/Madera		0.0%	88	5.8%	76	5.5%	I-880/238
Kern/Kings/Tulare		0.0%	12	0.8%	8	0.6%	I-880/238
Santa Cruz County		0.0%	2	0.1%	5	0.4%	I-880 S.
Other California	375	22.4%	56	3.7%	49	3.5%	
Other States	59	3.5%	53	3.5%	48	3.5%	
Unknown	4	0.2%	4	0.3%	174	12.5%	
Total	1671	100.0%	1507	100.0%	1390	100.0%	
Oakland Details							
Civic Center	11]	0.8%	18	1.2%	15	1.0%	1-880
Dimond	15	1.1%	24	1.6%	20	1.4%	1-880
Elmwood	72	5.2%	115	7.7%	95	6.8%	1-880
Fruitvale	69	5.0%	111	7.3%	91	6.6%	I-880
Grand Lake	3	0.2%	5	0.3%	4	0.3%	Local
Laurel	4	0.3%	6	0.4%	5	0.4%	Local
Mills College	2	0.1%	3	0.2%	3	0.2%	Local
North Oakland	17	1.2%	27	1.8%	22	1.6%	Local
San Antonio	71	5.1%	114	7.6%	94	6.7%	Local
West Oakland	41	3.0%	66	4.4%	54	3.9%	Local
Subtotal	305	22.1%	489	32.4%	403	29.0%	

SOURCE: Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, March/April 1993)

Table J.1-8
Truck Routes

Location			Inb	ound 1	rips					Out	bound	Trips		
	1-80 E.	1-80 W.	Rt. 24	1-880	1-880/238	I-880 S.	Local	I-80 E.	I-80 W.	Rt. 24	1-880	1-880/238	I-880 S.	Local
Oakland (see details below)														
Alameda							5							6
Berkeley/Albany/Emeryville	7	l i						8						
Lan Leandro/San Lorenzo						55							48	
Piedmont							0							0
Hayward/Castro Valley		i			52							43	1	
Fremont/Newark				ł		22					ŀ	i	13	ļ
Union City				1		18					1		25	ļ
Dublin/Livermore/Pleasanton				l	2			1				3]
San Pablo/Pinole/Rodeo	14			l				3						
Richmond	117			l				92						
El Cerrito	0			1				0						
Pittsburg/Antioch			7							12				
Martinez/Concord			12	l						8				
Walnut Creek/Orinda/Lafayette			0							0				
Alamo/Danville/San Ramon			4	1				1		1			1	
San Francisco		89		ļ		}		'	76					
San Mateo County		36							21					
Santa Clara County				İ		80	i i			ŀ			56	
Marin County	4						i l	4						
Napa/Sonoma Counties	14			ļ				20				İ	i ·	
Solano County	38							23				ļ		
Sacramento Area	100							65	1					
San Joaquin/Stanislaus					127					1		100	1	Į I
Fresno/Merced/Madera	1	ĺ			88				ł			76	İ	
Kern/Kings/Tulare					12			1				8	1	
Santa Cruz County						2			ĺ]	5	
Other California										Ì		1		
Other States					1						i			
Unknown					l	L	L		<u> </u>	<u> </u>	<u> </u>	<u> </u>		Щ
Caldand Datalla														
Oakland Details Civic Center	 	Γ		18	Ι	Γ	r				15			
Dimond				24	1	ł			l		20		1	
Eimwood				115					1		95	1		
Fruitvale	1			111	ł						91	i		
Grand Lake	H			```	1		5	1		ĺ		Ī		4
Laurel	1						6	l			1	1		5 3
Mills College				1			3		1	İ	1			3
North Oakland	I					[27						1	22
San Antonio	1						114	1					i	94
West Oakland	1						66	II					<u> </u>	54
					-									
										r				1 400
Total Inbound/Outbound Trips	294	125	23			177 13%	226 16%							188 17%
% of Total I/O Trips	21%	9%	2%	19%	20%	13%	10%	19%	3%	2%	20%	21%	13%	11.70
% of Total Trips (In & Out)	1							20%	9%	2%	19%	20%	13%	17%

SOURCE: Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, March/April 1993)

	Fri Nov 1, 1996 15:46:20	15:46:20		Page 1-1
	FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour	Vision 2000 EIS/EIR ing Conditions Peak Hour	1	
	Trip Generation Report	n Report	1 1 1 1 1 1 1 1 1	; ; ; ; ; ; ;
	Forecast for AM Peak Hour	Peak Hour		
Zone # Subzone	Ra Amount Units	Rate Rate In Out	Trips Trips In Out	Total % Of Trips Total
1 FISCO Are Zone	1 FISCO Areas 2805.00 Employees '90 0.28 0.05 Zone 1 Subtotal	0.28 0.05	785 140 785 140	925 100.0 925 100.0
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
TOTAL			785	

EXIST-AM.CMD	Fri Nov 1, 1996 15:46:20	Page 2-1	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland
	FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Trip Distribution Report		
	Percent Of Trips Existing		
	To Gates 11 12 13 14 15 16		
Zone			
1 30.0	30.0 7.0 10.0 19.0 19.0 15.0		

Page 3-1

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EXIST-AM.CMD Fri Nov 1, 1996 15:46:20

FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour

Turning Movement Report
AM Peak Hour

Total	Volume		1195	52	1247		1700	342	2042		1195	342	1537		1020	342	1362		1178	342	1520		1034	0	1034		1281	583	1864		686	583	1522
pu	Left Thru Right		S	0	5		0	0	0		0	0	0		87	0	87		0	0	0		372	0	372		0	0	0		99	0	99
Westbound	Thru		490	0	490		0	0	0		0	0	0		0	0	0		0	0	0		199	0	199		552	0	555		59	0	59
35	Left		425	0	425		0	0	0		0	0	0		22	0	22		0	٥	0		87	0	87		365	495	860		322	0	322
ηg	Right		0	0	0		615	290	905		ß	0	ß		11	0	11		41	0	41		-	0	1		49	0	49		59	0	29
Eastbound	Left Thru Right		0	0	0		300	0	300		0	0	0		0	0	0		0	0	0		16	0	16		184	0	184		9	0	9
E	Left		0	0	0		5	0	S)		20	0	20		15	0	15		70	52	122		13	0	13		0	0	0		89	0	co
pur	light		2	0	3		0	0	0		200	0	200		14	0	14		338	290	628		4	0	4	tion	0	0	0		56	0	56
Southbound	Left Thru Right	Ramps	2	0	2	Ramps	425	0	425		625	290	915		463	290	753	Extension	205	0	205	_	95	0	95	Connection	0	0	0		308	495	803
S	Left	¥B.	0	0	0	nd EB	S	0	Ŋ	St.	0	0	0		103	0	103			0	0	Extension	129	0	129	ate 2	0	0	0		56	0	56
pur	Right	W. Grand	0	0	0	W. Grand	90	0	90	Burma	0	0	0	14th St	39	0	39	7th St.		0	0		18	0	18	Rd./ Gate	73	88	191	3rd St.	31	53	84
Northbound	Left Thru Right	St./1	S	0	5	St./ 1	260	52	312	St./ 1	340	52	392	St./ 1	238	52	290	St./:		0	340	7th St.	62	0	62		0	0	0	St./ 31	9	35	95
No	Left	itime	260	52	312			0	0			0	S		28	0	28			0	184	St./	38	0	38	ile Ha	25	0	25	Adeline S	80	0	80
Volume	Type	#1 Maritime	Base	Added	Total	#2 Maritime	Base	Added	Total	#3 Maritime	Base	Added	Total	#4 Maritime	Base	Added	Total	#5 Maritime	Base	Added	Total	#6 7th	Base	Added	Total	#7 Middle Harbor	Base	Added	Total	#8 Ade]	Base	Added	Total

C 17.1 0.634 + 1.757 D/V

C 15.3 0.423

8 Adeline St./ 3rd St.

Fri Nov 1, 1996 15:46:20 EXIST-AM.CMD

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				4	AM Peak Hour	AM Peak Hour						
	1994	T HCM Op	Level Of Service HCM Operations Method	f S f	Service (Method	ervice Computation Report Method (Future Volume Alternative)	ttion Volu	Report	 ernati	ve)	* * *	; * * ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
Intersection #1 Maritime St./ W.	#1 W	Maritime	le St./		Grand	WB Ramps	SC	***************************************	*	•	,	,
Cycle (sec):	: : : :	100				Critical	1 001	Vol./Cap.	×		0.536	9
Loss Time (sec): Optimal Cycle:		0 (Y 49	0 (Y+R 9	4	4 sec) Avera		De		(sec/veh):		10.4 B	4 E
Approach:	NON	North Bound	und	Sos	South Bound	ound	# #	East Bound	pun	3		Bound
Movement:		E+	α; '	д	£ -	<u>د</u> ر	,ı	E→ ,	<u>م</u>	ıı	Ŧ	ص د
Control:	<u>-</u>	Protected	ed	Δ.	Protected	ed	<u> </u>	Protected	pə		Protected	 ed
Rights: Min Green:	0	Include	de	C	Include	nde 0	0	Include	de o	C	Include	de
Lanes:	, , , ,	0 1	00	0	0 1	1 0	•	0	0 0	, , , ,		ָ ס ר
 	<u>:</u>	1	:	-	:		<u>:</u>	1	!	<u> </u>		-
Base Vol:	260	Ŋ	0	0	2	5		0	0	425	490	S
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	260	vo o	0	0	r,	S C	0 (0 (425	490	· 52
Added Vol: PasserBvVol:	22.0	-)	9 0	o c	o c	9 0	o c	0 0	0 0	9 0	o c
Initial Fut:	312	າທ	0	0	, v	യ	0		0	425	490	വ
	1.00	7	1.00	1.00	1.00	1.00	1.00	-	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0	1.00	1.00	1.00	1.00
PAF Volume:	312	ΛC	o c	o c	ΛC	ΛC	o c	0 0	0 0	425	4 0 0	ΩC
Reduced Vol:	312	n O	0	0	o Co	o ro	0	0	0	425	490	ശ
PCE Adj:	1.00		1.00	1.00	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.0	1.00	1.00	1.00	1.00	1.00	1.0	1.00	1.00	Н	1.00
Final Vol.:	312	n	0	- - - -	'n	٠ -	ء ا	0	0 :	425	4, 1	יי ק
Saturation F		ow Module:		_		_	_		-	_		_
Sat/Lane:	1900	1900	1900	1900		1900	1900		1900	1900	1900	1900
Adjustment:	0.77	0.81	1.00	1.00		69.0	1.00		1.00	0.81	0.81	0.81
Lanes: Ginal Cat .	1.00	1.00	0.00	0.0	1505	1313	00.0	0.00	00.00	1.00	1520	10.0
ilat sat.:	1951				1040	1111	- i	ا ا		1040	1529	97
Capacity Anal	lysis			_		-	_		_	<u> </u>		-
Vol/Sat:	0.21	0.00	00.00	00.0		0.00	00.00	00.00	00.0	0.28	0.32	0.32
Crit Moves:	** *	•	6	4						•	* (,
Green/Cycle:	0.40	0.40	0.00	0.00		0.01	0.00		0.00	0.60	0.60	0.60
volume/cap:	1.54	10.0	00.0	3 :	0.0		0.0	0.0	00.0	0.46	0.04	0.04
Level Of Service Module	vice N	fodule		-		-	_		-	_		-
Delay/Veh:		11.6	0.0	0.0		88.4	0.0		0.0	7.5	8.2	8.5
User DelAdj:	1.00	1.00	1.00	1.00	ή.	7.00	1.00	1.00	7.00	1.00	1.00	1.00
Adia Dell Arte A		,	•			•	•		•	r	0	0

0

00.0

0.00 00.00 0.00 00.00

0.71 96.0

0.00 0.71 0.71 0.00 0.01 0.27

0.01 0.29 0.51 0.96

Green/Cycle: 0.00 0.28 0.28 Volume/Cap: 0.00 0.51 0.51

00.0

0.0 1.00 0.0

0.0 0.0 0.0 0.0 0

2.6 3.3

0.0 0.0

1.00 1.00 1.00

1.00 1.00

User DelAdj: 1.00 1.00 1.00

AdjDel/Veh:

Level Of Service Module:

Delay/Veh:

0.0 20.0 20.0 55.7 47.7

0.0 20.0 20.0 55.7 47.7

1.00 1.00 1.00

0

2.6 3.3 24.1

Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland Optimal Cycle: 39 Level Of Service: A 1.00 1.00 1.00 0.00 00.0 0.00 0.00 0.0 L - T - R L - T - R L - T - R L - T - R 1.00 1900 1900 1900 1900 1.00 0 0 0 Page 7-1 West Bound Protected Include 9.0 0 1.00 0.00 0.00 0.00 00.0 0.0 1.00 1.00 1.00 1.00 1.00 1.00 0.00 00.00 30.3 0.0 0.0 1.00 1.00 1.00 1.00 1.00 0.00 00.00 0 00.0 0.0 0 1994 HCM Operations Method (Future Volume Alternative) Cycle (sec): 100 Critical Vol./Cap. (X):
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh):
Optimal Cycle: 39 Level Of Service: 1.00 0.12 0.03 1.00 0.68 30.3 1 0 0 1 0 East Bound Protected Include 1.00 1.00 1.00 1.05 1.00 1.00 210 20 0 1.00 1.00 Level Of Service Computation Report 0 0.40 0.01 0.00 1900 1900 1900 0.96 0.03 0.00 0.41 0.41 0.00 0.2 33.8 0.0 1.00 1.00 1.00 0.76 1.00 1.00 0.00 0 33.8 0.0 FISCO/Port Vision 2000 EIS/EIR 0 Fri Nov 1, 1996 15:46:20 1444 Existing Conditions 0.2 AM Peak Hour L - T - R 0 1 1 0 South Bound Protected Include 0 1.00 1.00 0.00 0.14 0.00 0.00 0.40 1.00 1.00 Intersection #3 Maritime St./ Burma St. 915 915 1.00 1.00 1900 1900 1900 1900 1900 96.0 00.0 1.00 1.05 1.00 1.64 1900 2420 0.00 0.41 0.0 0.2 0 915 0 961 1.00 0.78 0.0 0.2 -----1.00 0.00 Green/Cycle: 0.01 0.97 0.00 0.41 0.14 0.00 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.05 0.0 0 1.00 1.00 1.00 0 0.0 1 0 1 1 0 North Bound Capacity Analysis Module: Protected Include Level Of Service Module: 0 1.00 1.00 1.00 1.00 5 392 Saturation Flow Module: Adjustment: 0.76 0.80 Lanes: 1.00 2.00 0.0 Growth Adj: 1.00 1.00 1.00 1.05 Final Sat.: 1444 3040 42.5 0.0 392 5 411 0 AdjDel/Veh: 42.5 Volume Module: EXIST-AM. CMD Initial Bse: PasserByVol: Initial Fut: Reduced Vol: Crit Moves: Volume/Cap: PHF Volume: Final Vol.: Min. Green: Reduct Vol: Added Vol: Delay/Veh: Approach: Movement: User Adj: Base Vol: Sat/Lane: PHF Adj: PCE Adj: Control: MLF Adj: Vol/Sat: Rights: Lanes:

AM Peak Hour Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection ## Maritime St./ 14th St. Critical Vol./Cap. (X): Optimal Cycle: Opt		Hour Computation Computation Computation Critical Crit	K Hour Computation Report (Future Volume Alternative) ***********************************	ernativ (x): (x): (veh): und	0.352 7.7 8**********************************	md R ed 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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al Cycle: 29 al Cycle: 29 ach:::::::::::::::::::::::::::::::::::	*********** South Bour L	erage	Vol./Cap. Selay (sec.) Service::: East Bou L	(X): //veh):	0.352 7.7 B B SST Boun T	87 87 87 87 87 87 87 87 87 87 87 87 87 8
Time (sec): 0 (Y+R al Cycle: 29 ach: North Bound ent: L - T - R	************ South Bou. L T - South Bou. L T - Protecte Includ 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	erage in the ser	Delay (Sec; Service: Service: East Bou L T T Permit Include O 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	/ven): ******* und R ted 0 0 1 1 0 0 0 0 0 0 0 0 0	sst Boun T	R R R O O O O O O O O O O O O O O O O O
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0.76 0.78 1.00 1.76 1444 2625 -			7	1900	1900	1900
1.00 1.76 L.: 1444 2625 				0.58	1.00	0.68
t.: 1444 2625 	1.00 1.96		0.0	0.45	00.0	1.00
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Analysis Module 0.02 0.12 es: ****			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-
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				,	0 00 0	9.
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0.0 3.5

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AdjDel/Veh: 31.6 0.5

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User DelAdj: 1.00 1.00 1.00 1.00 1.00

31.6 0.5

Delay/Veh:

Level Of Service Module:

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1		! ! !	! ! !	1			1	1 1 1 1 1 1		;	1
			FISCO	/Port Exis	FISCO/Port Vision 200 Existing Condit AM Peak Hour		2000 EIS/EI ditions lour	SIR				
Level Of Service Computation R 1994 HCM Operations Method (Future Volum ************************************	1994 *****	L HCM Op	Level Of Service Operations Method	Of Servious Met	Service C * Method (************************************	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative) ***********************************	tion F Volum	Report	ort Alternative) *********	ve)	* * *	**
***************************************	* * * *	* * * * * * *	* * * * *	*****	# # # # # # # # # # # # # # # # # # #	**************	* * * *	* * * *	* * * * *	*	******	* * * * *
Cycle (sec):		100				Critical Vol./Cap.	1 Vol.	/Cap.	:: (x)		0.803	м
Loss Time (sec): Optimal Cycle:	ec):	116	(Y+R	11 4.	sec) A	Average Delay (sec/veh) Level Of Service:	e Delay Of Serv	elay (sec Service:	/veh):		13.1 B	пд
	*	****	*****	* * * * *	* * * * *	*****************	****	****	****	***	******	* * * * *
Approach: Movement:	Ñ J	North Bound	und - R	So.	outh Bound - T -	ound - R	ı. Eğ.	st	Bound r - R	.⊒ .⊒	West Bo	Bound
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Min. Green: Lanes:	1	0 0	0 0	0	۰ ،	° .	00	۰,	0 0	0 7	0 7	00
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Volume Modul Base Vol:	e: 55	0	73		0	0	0	184	49	365	555	0
Growth Adj:	1.00	1.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	0	73	0	0	0		184	49	365	55	0
Added Vol:	0 (0 (88	0 0	0 (0 0	0 (0 0	0 0	495	0	0 0
PasserByvol: Initial Ent.	ນີ	o c	ואר)	> C)	0 0	184	0 4	960	55.0	0 0
User Adj:	1.00	1.0	1.00	1.00	1.0	1.00		1.00	1.00	1.00	-	1.00
PHF Adj:	1.00		1.00	1.00		1.00		1.00	1.00	1.00	-	1.00
PHF Volume:	55		161	0	0	0	0	184	49	860	555	0
Reduct Vol:	ם נ	0 (0 .	0 0	0 0	0 0	0 0	0 5	0 9	0 0	0 0	0 0
Reduced Vol: PCE Adi	50 -	-	197	000	0	1.00		1.00	1.00	1.00		1.00
MLF Adi:	1.00		1.00	1.00		1.00		1.05	1.05	1.00		1.00
Final Vol.:	55		161		0	0	0	193	51	860		0
Saturation F	- Flow Module	odule:	!	1		:		 	1	-	 	-
	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900
Adjustment:	0.76	Η.	0.68	1.00	-	1.00		0.78	0.78	0.76	0	1.00
Lanes: Final Sar .	1.00	00.00	1.00	00.0	00.0	00.00	00.0	23.72	616	1444	3040	00.00
		1								-	1 1	
Capacity Anal	lysis	Modul	e: 0	00	00.0	00 0	00.00	0.08	0.08	0.60	0.19	0.00
Crit Moves:	5		*					*		*	l ·	
Green/Cycle:	0.16		0.16	00.00		00.00	00.00	0.10	0.10	0.74	89	00.00
Volume/Cap:	0.25	00.0	08.0	0.00	00.0	00.0	00.0	0.80	0.80	08.0	0.23	0.00
Level Of Service Module	vice l	Module						-				
Delay/ven: Tear Deladi	7. #.7	0.6	40.1	0.0	9 6	0.6	0.0	1.00	1.00	0.0	1 00	0.0
Adilla Vah.	20.40				1		2		20.1			
	•	:										

Table J.1-9 (Continued)

EXIST-PM.CMD	Fri Nov 1, 1996 15:45:58	Page 2-1	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FISCO/Port Vision 2000 BIS/EIR Existing Conditions PM Peak Hour		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Trip Distribution Report	t 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Percent Of Trips Existing		
11 Zone	To Gates 11 12 13 14 15 16		
1 30.0	30.0 7.0 10.0 19.0 19.0 15.0		

Fri Nov 1, 1996 15:45:58 EXIST-PM.CMD

Page 3-1

Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 BIS/BIR Existing Conditions PM Peak Hour

	Total Volume
	Westbound Total Left Thru Right Volume
ment Report Hour	Eastbound Left Thru Right
Turning Movement Report PM Peak Hour	olume Northbound Southbound Eastbound Ype Left Thru Right Left Thru Right
	Northbound Left Thru Right
	olume Ype

Total	Volume		1435	218	1653		1670	280	1950		1470	280	1750		1471	280	1751		1181	280	1461		1109	0	1109		1388	477	1865		860	477	1337
nd			ß	0	Ŋ		0	0	0		0	0	0		290	0	290		0	0	0		153	0	153		0	0	0		78	0	78
Westbound	Left Thru Right		490	0	490		0	0	0		0	0	0		0	0	0		0	0	0		48	0	48		257	0	257		39	0	39
We	Left		95	0	95		Ò	0	0		0	0	0		92	0	92		0	0	0		28	0	28		128	106	234		8	0	8
ρţ	Right		0	0	0		215	62	277		20	0	20		36	0	36		93	0	93		42	0	42		133	0	133		13	0	13
Eastbound	Left Thru Right		0	0	0		255	0	255		0	0	0		0	0	0		0	0	0		141	0	141		421	0	421		14	0	14
Ea	Left		0	0	0		5	0	ស		185	0	185		19	0	19		226	218	444		73	0	73		0	0	0		30	0	30
pur	Right		S	0	S		0	0	0		ហ	0	2		14	0	14		16	62	,138		9	0	9	tion	0	0	0		15	0	15
Southbound	Left Thru Right	Ramps	10	0	10	Ramps	100	0	100		320	62	382		252	62	314	Extension	380	0	380		117	0	117	Connection	0	0	0		41	106	147
So	Left	Grand WB	0	0	0	nd EB	ស	0	Ŋ	St.	0	0	0	.;	105	0	105	Exte	0	٥	0	Extension	327	0	327	te 2	0	0	0		43	0	43
pun	Right			0	0	W. Grand	265	0	265	Burma	0	0	0	14th St	28	0	28	7th St.	0	0	0		45	0	45	Rd./ Gate	347	371	718	3rd St.	122	224	346
Northbound	Left Thru Right	St./ W.	10	0	10	St./	825	218	1043	St./	905	218	1123	St./	601	218	819	St./	365	0	365	7th St.	120	0	120		0	0	0	St./3	340	147	487
	Left	itime	820	218	1038		0	0	0		5	0	ည		34	0	34	itime	41	0	41	St./	6	0	6	ile Ha	102	0	102		36	0	36
Volume	Type	#1 Maritime	Base	Added	Total	#2 Maritime	Base	Added	Total	#3 Maritime	Base	Added	Total	#4 Maritime	Base	Added	Total	#5 Maritime	Base	Added	Total	#6 7th	Base	Added	Total	#7 Middle Harbor	Base	Added	Total	#8 Adeline	Base	Added	Total

EXIST-PM.CMD Fri Nov	Fri Nov 1, 1996 15:45:58	58	Page 4-1	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland
FISCO/Port Exist PW	FISCO/Port Vision 2000 EIS/EIR Existing Conditions PM Peak Hour	S/BIR		
Impact	Impact Analysis Report Level Of Service			
Intersection	Base Del/ V		Change in	
# 1 Maritime St./ W. Grand WB Ramp C 22.7 0.886	C 22.7 0.86	i6 E 47.8 1.034	+25.048 D/V	
# 2 Maritime St./ W. Grand EB Ramp	B 9.3 0.554	4 B 10.5 0.673	+ 1.157 D/V	
# 3 Maritime St./ Burma St.	B 6.3 0.441	1 B 5.6 0.516	-0.638 D/V	
# 4 Maritime St./ 14th St.	B 14.3 0.516	.6 B 13.7 0.590	-0.641 D/V	
# 5 Maritime St./ 7th St. Extensio	B 10.7 0.361	1 B 13.3 0.543	+ 2.655 D/V	
# 6 7th St./ 7th St. Extension	C 17.5 0.473	3 C 17.5 0.473	V/G 000.0 +	
# 7 Middle Harbor Rd./ Gate 2 Conn	1 B 14.7 0.557	Q	28.4 0.917 +13.722 D/V.	
# 8 Adeline St./ 3rd St.	В 13.7 0.320	0 B 13.1 0.505	-0.601 D/V	

Table J.1-9 (Continued)

Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland 1.00 1.00 1900 0.32 1.00 1.00 1.00 0.81 0.01 1.00 0.31 1.03 63.6 1 0 0 1 0 L - T - R West Bound Page 5-1 Protected Include Ħ 47.8 1.034 0 490 1900 1900 1900 0.00 0.00 0.00 0.00 0.06 0.32 0.31 0.31 0.00 0.20 1.03 0.0 16.4 63.6 16.4 63.6 1.00 490 490 1.00 1.00 1.00 1.00 1.00 1.00 0.81 0.81 1.00 0.99 1545 1529 0 1994 HCM Operations Method (Future Volume Alternative) 00.0 0 (Y+R = 4 sec) Average Delay (sec/veh): 1.00 0.00 1.00 1.00 1.00 0.0 Critical Vol./Cap. (X): L - T - R 0 0 0 0 East Bound Protected Include 0.0 0.0 1.00 1.00 0.00 00.00 ٥ 1.00 0.00 0.00 0.01 0.00 0.00 Level Of Service Computation Report 1.00 1.00 1900 1900 1900 1.00 1.00 1.00 1.00 1.00 1.00 0.0 0.0 Level Of Service: FISCO/Port Vision 2000 EIS/EIR 0 Fri Nov 1, 1996 15:45:58 Existing Conditions Intersection #1 Maritime St./ W. Grand WB Ramps 1.00 1.00 69.0 81.0 1.00 1.00 0.61 1.00 81.0 0 1313 PM Peak Hour L - T - R 0 0 1 0 1 South Bound Protected Include 0 0.71 0.01 0.00 0.00 0.01 Green/Cycle: 0.68 0.69 0.00 0.00 0.01 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1900 1900 1900 1900 1900 1.00 1.00 0.00 0.00 1.00 0 1545 1.03 0.01 0.00 0.00 1.03 0.0 281 281 1.00 1.00 1.00 1.00 1.00 1.00 0.81 1.00 1.00 0.0 0 1.00 0.0 0.0 1.00 User DelAdj: 1.00 1.00 1.00 1.00 0 0 0 L - T - R North Bound Capacity Analysis Module: Protected Include 0 Level Of Service Module: 180 Saturation Flow Module: 0.77 0.81 0 Growth Adj: 1.00 1.00 1467 1545 AdjDel/Veh: 41.1 3.1 1.00 1.00 1.00 1.00 10 0 Final Vol.: 1038 PasserByVol: 0 Initial Fut: 1038 PHF Volume: 1038 Reduced Vol: 1038 Loss Time (sec): Optimal Cycle: Volume Module: Initial Bse: Cycle (sec): Volume/Cap: Rights: Min. Green: Final Sat.: EXIST-PM.CMD Adjustment: Crit Moves: Reduct Vol: Delay/Veh: Added Vol: Approach: User Adj: Base Vol: Movement: Sat/Lane: PHF Adj: PCE Adj: MLF Adi: Vol/Sat: Control: Lanes:

Page 7-1

EXIST-PM.CMD

1994 HCM Operations Method (Future Volume Alternative)

Level Of Service Computation Report

PM Peak Hour

********************************** 1.00 1.00 1.00 1.00 0.00 00.00 1.00 0.0 0.00 0 0 0 0 West Bound Protected Include 5.6 B 0.516 0.0 0.0 0 1900 1900 1900 1900 1900 0.00 0.39 0.00 0.00 0.13 0.13 0.13 0.00 0.04 0.00 0.00 1.00 1.00 0.00 00.00 0.00 00.00 1.00 1.00 1.00 1.00 1.00 0.0 0.0 1.00 1.00 1.00 0.00 0.00 0 1.00 1.00 1.00 0 (Y+R = 4 sec) Average Delay (sec/veh): 1.00 0.16 Critical Vol./Cap. (X): 1.00 0.25 1.00 0.68 19.0 1.00 2.7 22.0 0.0 19.0 0 L - T - R East Bound Protected Include 0 0 0 Level Of Service: 0.73 0.25 0.00 0.18 0.52 0.00 2.7 22.0 0.0 1.00 1.00 1.00 1.05 1.00 1.00 1.00 1.00 0.76 1.00 1.00 0.00 0 1444 185 -1.00 0.80 0.02 0 1.00 1.00 1.00 L - T - R 1 0 1 1 0 South Bound Protected Include 1.00 1.00 1.00 1.00 0.0 2.7 0 1.00 1.00 1.00 1.00 0 382 1.00 Intersection #3 Maritime St./ Burma St. 1900 1900 1900 1900 1900 382 1.00 1.98 0.00 0.73 62 382 1.00 0.80 1900 3003 0.00 0.18 0.0 2.7 0 401 ----||----0 1.00 Green/Cycle: 0.02 0.75 0.00 1.00 0 Growth Adj: 1.00 1.00 1.00 Initial Bse: 5 905 0 1.05 1.00 2.00 0.00 0 0.0 0.0 1.00 1.00 1.00 User DelAdj: 1.00 1.00 1.00 L - T - R 0 1 1 0 North Bound Protected Include Capacity Analysis Module: 47 100 Level Of Service Module: 0 Saturation Flow Module: 31.6 3.4 218 1.00 0.76 0.80 1123 0 1.00 1.00 1.00 1.05 1444 3040 Volume/Cap: 0.18 0.52 5 1123 5 1123 5 1179 AdjDel/Veh: 31.6 3.4 1.00 Loss Time (sec): Optimal Cycle: Volume Module: Cycle (sec): PasserByVol: Initial Fut: Reduced Vol: Adjustment: Final Sat.: Rights: Min. Green: Final Vol.: Crit Moves: PHF Volume: Reduct Vol: Delay/Veh: Added Vol: Approach: User Adj: Movement: Base Vol: PCE Adj: Sat/Lane: PHF Adj: Control: Jol/Sat: MLF Adj: Lanes: Lanes:

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#6 7th St. 7th St. Extension #6 7th St. 7th St. Extension #6 7th St. 7th St. Extension #6 7th St. 7th St. Extension #6 7th St. 7th St. Extension #6 7th St. 7th St. Extension North Bound L										
Level Of Service Computation Report Level Of Service Computation Report 100 Critical Volume Alternative) 100 Critical Vol./Cap. (X): 100 Criti			FISCO,	Port Vis Existing PM Pe	ion 200 Condit ak Hour	0 EIS/1	SIR			1 1 1
7 Th St. / 7th St. Extension Critical Vol.(Cap. (X): 1 0 (Y+R = 4 sec) Average Delay (sec/veh): 43 Lare 1 of Service: North Bound South Bound East Bound Lare 1 lare 1 lare 1 lare 1 lare 1 lare Protected Frotected Frotected Frotected Include 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		L L L 1994 HCM Op	evel Of	Service S Method	Comput (Futur	ation]	Report	ernativ	·e)	*
); 0 (Y+R = 4 sec) Average Delay (sec/veh): 43 Lorel Of Service: North Bound South Bound East Bound L T R L T R L T R L T R L L T R L L T R L L L T R L L L L	ersection	#6 7th St.	/ 7th 8	St. Exten	sion	****	* * * *	* * * * * *	*******	****
); 0 (Y+R = 4 sec) Average Delay (sec/veh); 43 Lorel Of Service: North Bound South Bound Bast Bound L T - R L - T - R L - T - R L Protected Frotected Frotected Frotected Include	:le (sec):	100			Critic	al Vol	./Cap.	: (x)	0.473	m i
North Bound South Bound East Bound Include Dougles Protected Include Dougles D	ss Time (s	((Y+R	4	Averag	e Dela	y (sec/ vice:	veh):	17.5 C	n U
North Bound South Bound East Bound February	1 MAI CYCI	****	****	*******	*****	*****	****	*****	****	*****
Description	proach:	North Bo	nnd	South	Bound		ast Bou	pur	West	pun
Protected Protected Protected Include	/ement:		e4 -	1	1 1	ء =	+	- !	1	
Include Include Include Include Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	res):	Protect	ed .	Prote	scred	д	rotect	eg G	Protected	eq
Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	thts:	Inclu	de	In	lude		Inclu	de	Inc	
1 0 1 1 0	n. Green:	0		۰ ,	,	•	, ٥	c	0 .	۰ .
dule: j 120	nes:	0		0	-	7 -	7	1	1	
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9 120 45 327 117 6 73 141 42 0 0 0 0 0 0 0 0 0 100 1.00 1.00 1.00 1.	owth Adj:	.00	1.00	1.00 1.0				1.00	Η.	1.00
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1.00 1.00	sserByVol:		0 !				,	- (5	15.2
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100 100	er Ad]:		9 6		٠-			00 -	-	1.00
1. 9 120 45 327 117 6 73 141 42 1.00	F Adj:		45	•	;	•		42	ı	153
1.00 1.00	duct Vol.		0					0	0	0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	duced Vol:		45					42		153
1.: 9 126	E Adi:		1.00		-	٦		1.00	1.00 1.00	1.00
11.; 9 126	F Adj:		1.05		-	-		1.10	Ä	1.00
1900 1900 1900 1900 1900 1900 1900 0 0.74 0.73 0.76 0.76 0.73 0.75 0.75 0.75 0.75 1388 2759 135 1388 3280 973 1.06 0.24 0.09 1.00 2.31 0.69 1.00 2.31 0.69 1.00 2.31 0.69 1.00 2.31 0.69 1.00 2.31 0.69 1.00 0.05 0.05 0.05 0.05 0.05 0.11 0.26 0.26 0.37 0.47 0.08 0.08 0.47 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.18	nal Vol.:		47		23	-	15	46	28 50	153
1900 1900 1900 1900 1900 1900 1900 1900	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1 1 1 1 1	-	1		1	
1388 2044 762 1388 2759 135 1388 3280 973 1388 2044 762 1388 2759 135 1388 3280 973 1388 2044 762 1388 2759 135 1388 3280 973 145 1588 2044 762 1388 2759 135 1388 3280 973 145 1588 2044 762 138 2759 135 1388 3280 973 145 1888 2044 762 138 205 105 105 105 105 105 105 105 105 105 1	turation F	Tow Module:						1900	1900 1900	1900
1.00 1.00 1.00 1.00 1.00 1.00 2.31 0.69 1.38 8.3280 973 1.38 8	c/rane:							0.75		0.65
1388 2044 762 1388 2759 135 1388 3280 973 1388 2044 762 1388 2759 135 1388 3280 973 1388 2044 762 1388 2759 135 1388 3280 973 1388 2044 762 1388 2759 135 1388 3280 973 1388 2044 762 100 0.01 0.05 0.05 0.05 0.05 0.05 0.05	Justment:	0.73 0.74						69.0		1.00
1388 2044	nes:		# C					473		1242
yais Module: 0.01 0.06 0.06 0.24 0.04 0.04 0.05 0.05 0.05 0.05 **** **** 0.08 0.13 0.13 0.55 0.55 0.11 0.26 0.26 0.08 0.47 0.47 0.47 0.08 0.08 0.47 0.18 0.18	nal sat.:		70/		1	Ξ,				1
0.01 0.06 0.06 0.24 0.04 0.04 0.05 0.05 0.05 0.05 0.05 0.0	pacity Ana		- :e	-						
0.08 0.13 0.13 0.50 0.55 0.55 0.11 0.26 0.26 0.08 0.14 0.47 0.47 0.08 0.08 0.47 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.18	1/Sat:	0.01		.24 0	0	0		0.05	0.02 0.02	0.12
0.08 0.13 0.13 0.50 0.55 0.55 0.11 0.26 0.26 0.08 0.47 0.47 0.47 0.08 0.08 0.47 0.18 0.18 0.18 0.08 0.47 0.47 0.08 0.08 0.47 0.18 0.18 0.18 0.08 0.47 0.18 0.18 0.18 0.08 0.47 0.18 0.18 0.18 0.08 0.47 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.18	it Moves:	* * * *		* * *		*				*
0.08 0.47 0.47 0.47 0.08 0.08 0.47 0.18 0.18	een/Cycle	0.08		0				0.26	0.2	0.26
	lume/Cap:	0.08		.47				0.18	0.18 0.07	0.47
71.06 1.00 1.00 1.00 1.00 1.00 1.00 1.00			-		1 1 1 1	<u>:</u>				
27.5 26.8 26.8 11.0 6.9 6.9 26.7 12.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00		vice Module	••				9	a	0 81 1 90	21 0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	lay/Veh:	27.5		11.0				0.0		
	ser DelAdj	1.00		1.00 1				. מ מ		
27.5 26.8 26.8 II.U 6.9 6.9 20.7 10.0 10.0	AdjDel/Veh:	27.5 26.8	26.8	11.0				0.01		
	,									

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				Exist	sting Condit PM Peak Hour	Existing Conditions PM Peak Hour	Existing Conditions PM Peak Hour					
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	1994] ****	L HCM Op	Level Of Service Operations Method	Of Service lons Method	rice C thod (Computation Report (Future Volume Alternative)	tion F Volum	Report	ernati	(Ve)		; # ! # ! # ! #
<pre>************************************</pre>	* * * * * * * * * * * * * * * * * * *	1000	******* 0 0 (Y+R 0	# # # # # # # # # # # # # # # # # # #	sec) A	retrical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	1 Vol. Delay f Serv	Vol./Cap. Service:	(X): /veh):	* * *	0.917 28.4 D	7 4 0
Approach: Movement:	* 1	**************************************	North Bound	Sou	South Bound	**************************************	# # # 129	East Bound	***** und - R	* 1	West Bound	****** und - R
Control:		Protected			Protected	 eq		Protected	 eg		Protected	 ed
Rights: Min. Green:	0	include 0	o o	0	inciude 0	o ee	0	0 0	o ee	0	nciude 0	o ee
	٦,	0	. 0	0	0	0	0 -	0 1	1 0	- -+ 	0	0
Volume Modul	e:		347		٥	- 6	-	421	133	128	257	- 0
Growth Adj:	1.00	1.0	1.00		1.00	1.00	1.00	1.00	1.00	1.00	~	1.00
Initial Bse:	102		347	0 0	0 0	0 0	0 0	421	133	128	257	0 0
Added Vol: PaggerBVVol:	- 0	9 0	7,0	0	9 0	0	0	0	0	901	0	0
Initial Fut:	102		718	0	0	0	0	421	133	234		0
User Adj:	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj: PHF Volume:	1.00	1.00	1.00	1.00	1.00	00.1	1.00	1.00	133	234	257	00.1
Reduct Vol:	0		0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102		718	0	0	0	0	421	133	234		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	٦,	1.00	1.00		1.00
MLF Adj: Final Vol.:	1.00	1.00	718	0 0	00.1	00.1	00.1	442	140	234	270	0.1
Saturation Flow Module:	¥ 30[odule:	-	-	! ! !	:	-	! !	† ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !	-	! ! !	
Sat/Lane:	1900	1900			1900	1900	1900		1900	1900		1900
Adjustment:	0.76		0		1.00	1.00	1.00	۰ ر	0.77	0.76	0 (1.00
Lanes: Final Sat.:	1.00	00.0	1.00	00.0	0.00	0.00	0.00	1.52 2216	702	1444	3040	0.00
Capacity Analysis	lysis		- :	1		1			-			
Vol/Sat: Crit Moves:	0.07	00.0	****	0.00	0.00	00.0	0.00	0.20	0.20	4 * * *	60.0	00.00
Green/Cycle:	0.61	00.0	0.61	00.00	00.00	00.00	0.00		0.22	0.18	0	00.0
Volume/Cap:	0.12	00.00	0.92	00.00	00.0	0.00	00.0	0.92	0.92	0.92	0.23	0.00
Level Of Service Module	Vice	Module		-	1		<u>:</u>		-	1		
Delay/Veh:	5.4			0.0	0.0	0.0	0.0		37.9	51.0		0.0
Heer Deladi.	•			5		5	00.		5	1.00	0	
. (7	9.1	1.00	7	2							3

			FISCO,	/Port Exist	Vision ing Co	FISCO/Port Vision 2000 EIS/EIR Existing Conditions	EIS/E	IR			
				WA !	PM Peak Hour	Hour		1			1
1994		Le HCM Ope	evel (eratio	E Service ns Method	*	Computation Report (Future Volume Alt	tion R	eport e Alte	Computation Report (Future Volume Alternative)	/e) *********	* * *
Intersection #8 Adeline St./ 3rd St.	#8 Ade	Adeline	St./	3rd St	****	****************	* * * * *	* * * *	*****	*********	****
Cycle (sec):		100				Critical	l Vol.	Vol./Cap.	: (x)	0.505	35
Loss Time (sec)	c):	0	(Y+R	= 4 s	sec) A		Delay	(sec/	veh):	13.1	٠. ۵
Optimal Cycle:		46	*	*) .	Leventer of Service:	. SELVICE:	* * C C : * * * *	****	************	*****
Approach:	Nort	North Bound	nnd	Sou	South Bound	nnd	Ea	East Bound	pur	West Bo	Bound
Movement:		₽	R	٦.	H	e#	ָרָ רָּ	E	~ -	T - 1	24
Control:	Spli	Split Phase	ase.	Spl	Split Phase	ase	Spl	Split Phase	ese .	Split Phase	hase
Rights:		Include	de	•	Include	de		Include		Inc	
Min. Green:	0	° -	۰ .	ວ່	° c	0 0	0 0	۰ 。	0 0	0 0 0	, 0 0
names:	- 1	- 1	,	1	, ,	- 1	1	1	1	1	1
ď			-	_		-	-	;	- (
Base Vol:	36	340	122	43	41	15	30	14	13	6 6	
Growth Adj:		1.00	1.00	1.00	1.00	1.00 15	1.00	1.00	13	1.00 1.00 89 39	-
Initial BBe: Added Vol:	9 0	147	224	10	106	10	9 0	. 0	9 0		
PasserBvVol:	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	36	487	346	43	147	15	30	14	13		
User Adj:		1.00	1.00	υ.00	1.00	1.00	1.00	1.00	1.00	7	
PHF Adj:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0	i.
PHF Volume:	36	487	346	4 E 4	147	15	30	14	13	68 68	80 0
Reduct Vol:	0 (0 0	2 ,) c	2,	ם ע	2	2	י כ	,	
Reduced Vol:	9 6	184	346	100	1 000	1 00	1.00	1.00	1.00	Ä	Η.
M.F. Adi.	20.1	1.05	1.05	1.05	1.05	1.05	1.00	1.00	1.00	٦	7
Final Vol.:		512	363	45	154	16	30	14	13	68 39	
1			-	<u> </u>	!		-				1
Saturation Fl	ow Module	dute:	•	9	0	000	1 900	1 900	000	0061 0061	0061
Sat/Lane:		1900	ממגד	200	1900	200	2000	4 0	72		
Adjustment:	7 0	27.7	7.0	0 . 7	. 4	21.0	00 -		84.0		
Lanes: Final Car .	20.0	1541	20.0	600	2052	213	1388	705	654	1	
				:		1 1 1		1 1 1 1 1 1 1		- :	1
Capacity Analysis	ysis	Modul		_		-			-		
Vol/Sat:	0.33	0.33	0.33	0.08	0.08	0.08		0.02	0.02	0.08 0.08	
Crit Moves:		* * * *			* * *		* * *				
Green/Cycle:	99.0	99.0	99.0	0.15	0.15	0.15	0.04	0.04	0.04		
Volume/Cap:		0.51	0.51	0.51	0.51	0.51	0.51	0.46	0.46	0.51 0.51	0.51
		Module	-	<u> </u>		-	-			-	1
/Veh		5.9	5.9	26.2	26.2	26.2	33.3	32.2	32.2	26.1 26.1	
User DelAdi:	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00 1.00	
ather Meh.		ď	ď	26.2		26.2	22	32.2	32 2	26.1.26.1	26 1
Adjust/ven:		•	•	1	•		,	,	1	4	

Table J.1-10

FISCO/Port Vision 2000 EIS/EIR Train Traffic At Roadway Crossings Existing Weekdays (After UP/SP Merger)

		Nun	nber of T	rains in	Both Direction	าร	Train Spe	ed (mph)
Crossing Street	Passe	nger *	Frei	gnt *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	16	12			32	60	60
2. Gilman Street	4	16	12	4	4	40	60	60
3. Camelia Street	4	16	12	4	4	40	60	60
4. Cedar Street	4	16	12	4	4	40	60	60
5. Virginia Street	4	16	12	4	4	40	60	60
6. Hearst Avenue	4	16	12	4	4	40	60	60
7. Addison Street	4	16	12	4	4	40	60	60
8. Bancroft Way	4	16	12	4	4	40	60	60
9. 67th Street	4	16	12	4	4	40	45	45
10. 66th Street	4	16	12	4	4	40	45	45
11. 65th Street	4	16	12	4	4	40	45	45
12. Market Street	10	26	4	4		44	15	15
13. M. L. King Blvd.	10	26	4	4		44	15	15
14. Clay Street	10	26	4	4		44	15	15
15. Washington Street	10	26	4	4		44	15	15
16. Broadway	10	26	4	4		44	15	15
17. Franklin Street	10	26	4	4		44	15	15
18. Webster Street	10	26	4	4		44	15	15
19. Oak Street	10	26	4	4		44	15	15
20. 5th Avenue	2	6	4	4		16	40	20
21. 29th Avenue	2	6	4	4		16	60	40
22. Fruitvale Avenue	2	6	4	4		16	60	40
23. 37th Avenue	2	6	4	4		16	60	40

^{*} Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.1-11

FISCO/Port Vision 2000 EIS/EIR Gate Down Time At Roadway Crossings Existing Weekdays (After UP/SP Merger)

	Ga	te Down	Time Pe	er Train (minutes)	Total Gate
Crossing Street		Passe	nger *		Switchers *	Down Time
_	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	32
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	37
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	37
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	37
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	37
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	37
7. Addison Street	0.7	0.6	1.6	0.7	0.6	37
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	37
9. 67th Street	0.8	0.7	2.0	0.8	0.6	44
10. 66th Street	0.8	0.7	2.0	0.8	0.6	44
11. 65th Street	0.8	0.7	2.0	0.8	0.6	44
12. Market Street	1.4	1.0	5.0	1.4	0.0	66
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	66
14. Clay Street	1.4	1.0	5.0	1.4	0.0	66
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	66
16. Broadway**	1.4	1.0	5.0	1.4	0.0	66
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	66
18. Webster Street	1.4	1.0	5.0	1.4	0.0	66
19. Oak Street	1.4	1.0	5.0	1.4	0.0	66
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	26
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	17
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	17
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	17

^{*} Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Gate Down Time Per Train = (a + b / 1.47 / c) / 60) where, a = 30 seconds track clearance time b = train length (ft.) c = train speed (mph)

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.1-12

FISCO/Port Vision 2000 EIS/EIR Traffic Volumes at Railroad Crossings Existing Weekdays (After UP/SP Merger)

Crossing Street	Jurisdiction	Average Daily Traffic for Year Traffic Was Counted	Year Traffic Was Counted	Average Daily Traffic (1996)
Cutting Boulevard	Richmond	26,892	1994	27,430
2. Gilman Street	Berkeley	17,413	1986	19,150
3. Camelia Street	Berkeley		1996 (Estimated Max.)	2,000
4. Cedar Street	Berkeley	3,413	1986	3,750
5. Virginia Street	Berkeley	1,584	1986	1,740
6. Hearst Avenue	Berkeley	5,758	1986	6,330
7. Addison Street	Berkeley		1996 (Estimated Max.)	2,000
8. Bancroft Way	Berkeley		1996 (Estimated Max.)	2,000
9. 67th Street	Emeryville		1996 (Estimated Max.)	2,000
10. 66th Street	Emeryville		1996 (Estimated Max.)	2,000
11. 65th Street	Emeryville		1995	2,700
12. Market Street	Oakland	3,655	1996	3,660
13. M. L. King Blvd.	Oakland	309	1976	340
14. Clay Street	Oakland	1,531	1977	1,680
15. Washington Street	Oakland	613	1976	670
16. Broadway	Oakland	11,833	1978	12,900
17. Franklin Street	Oakland	1,626	1976	1,790
18. Webster Street	Oakland	3,111	1974	3,450
19. Oak Street	Oakland	3,340	1976	3,670
20. 5th Avenue	Oakland	6,224	1976	6,850
21. 29th Avenue	Oakland	9,034	1990	9,310
22. Fruitvale Avenue	Oakland	22,304	1993	22,640
23. 37th Avenue	Oakland	1,070	1994	1,080

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Note: Escalation factors were applied to escalate counts to 1996 estimated values as follows:

Cities of Richmond & Berkeley - 1% per year; City of Oakland 1/2% per year.

Table J.1-13

FISCO/Port Vision 2000 EIS/EIR Vehicle Delay at Railroad Crossings Existing Weekdays (After UP/SP Merger)

		Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(1996)	(min./day)	(hours/day)
1. Cutting Boulevard	Richmond	27,430	32	9.9
2. Gilman Street	Berkeley	19,150	37	7.5
3. Camelia Street	Berkeley	2,000	37	0.8
4. Cedar Street	Berkeley	3,750	37	1.5
5. Virginia Street	Berkeley	1,740	37	0.7
6. Hearst Avenue	Berkeley	6,330	37	2.5
7. Addison Street	Berkeley	2,000	37	0.8
8. Bancroft Way	Berkeley	2,000	37	0.8
9. 67th Street	Emeryville	2,000	44	1.1
10. 66th Street	Emeryville	2,000	44	1.1
11. 65th Street	Emeryville	2,700	44	1.5
12. Market Street	Oakland	3,660	66	4.1
13. M. L. King Blvd.	Oakland	340	66	0.4
14. Clay Street	Oakland	1,680	66	1.9
15. Washington Street*	Oakland	670	66	0.8
16. Broadway*	Oakland	12,900	66	14.6
17. Franklin Street*	Oakland	1,790	66	2.0
18. Webster Street	Oakland	3,450	66	3.9
19. Oak Street	Oakland	3,670	66	4.2
20. 5th Avenue	Oakland	6,850	26	3.4
21. 29th Avenue	Oakland	9,310	17	1.9
22. Fruitvale Avenue	Oakland	22,640	17	4.7
23. 37th Avenue	Oakland	1,080	17	0.2
Total Delay				70.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996 Dowling Associates 1996 Appendix J.2 Marine Terminal Traffic Analysis

Marine Terminal Traffic Analysis

Fleet Industrial Supply Center, Oakland (FISCO) **Disposal and Reuse EIS/EIR**

Project W96021

October 28, 1996

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This report was prepared by Jordan Woodman Dobson for the Port of Oakland. JWD is working for Tetra Tech in the development of an EIS / EIR for the Port.	
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1. Overview

1.1 Introduction

This report provides data in support of the Traffic Impact section of the Environmental Impact Statement and Report (EIS/EIR) for the redevelopment of the Naval Fleet Industrial Supply Center, Oakland (FISCO).

The proposed FISCO site redevelopment includes plans for new marine terminals along the Port of Oakland's Inner Harbor Channel, as well as the development of a new Joint Intermodal Rail Terminal (JIT). The new marine terminals are expected to generate traffic to and from the new JIT and to and from regional roads and highways.

Jordan Woodman Dobson (JWD) was contracted to estimate volumes of automobile and truck traffic that can be generated by existing and new marine terminal developments in 1996 and 2010. JWD estimated peak-day traffic generated by marine terminals in four zones: Outer Harbor, 7th Street, Middle Harbor, and a New Terminal Area.

The "peak day" was assumed to be an average day during a peak traffic week. Three time periods during a peak gate day were of particular interest: the morning peak, 7 AM to 9 AM; the evening peak, 4 PM to 6 PM; and the lunch peak, 11 AM to 12 noon.

1.2 PROCESS

TRUCK TRAFFIC

Truck traffic for 1996 is estimated from 1995 data by assuming a uniform increase in container throughput per terminal and ratio of truck trips to ship lifts.

Truck traffic for 2010 was estimated by assuming that container shipping will grow at the rate predicted by the *San Francisco Bay Area Seaport Plan* prepared by Multitrans Corporation in 1994. The number of ship moves to rail was assumed to be variable with at least 5% of ship traffic moving by rail. The number of ship moves by road to local markets was assumed to be fixed. Total volumes were adjusted to not exceed the capacity of each option as determined by JWD.

The marine terminal areas within the Port were grouped into four zones, summarized in Table 1.1.

Zone	Code	Zone	Terminals
New Terminal Area	NT	1	To Be Built
Middle Harbor	MH	6	APL, Howard
7th Street	7th St	7	TraPac, Matson, MTC
Outer Harbor	OH	8	Sea-Land, Yusen, Maersk, TransBay

Table 1.1
Port of Oakland Terminals and Zones

Four alternative FISCO redevelopment plans are under consideration for New Terminal Area, Zone 1. These include four alternatives labeled Options A through D, as well as a No-Build option. The acreages for these options were based on proposed development plans presented in the EIS/EIR document.

The acreages of the existing marine terminals in Zones 6 through 8 were taken from the 1996 edition of *Lloyds Ports of the World*. According to Tetra Tech, Inc., the size of the existing terminals would not increase between now and 2010, except in Development Alternative B where Zone 8 was assumed to expand by 22 acres.

The daily truck trips were distributed over the course of a day according to an observed truck arrival pattern, and a derived truck departure pattern based on the arrival pattern and a truck turnaround time. JWD used data collected in 1996 at Marine Terminals Corporation's (MTC) 7th Street terminal to estimate the hourly truck traffic arrival and departure patterns for terminals.

CAR TRAFFIC

Car traffic at the Port was estimated based on terminal acreage, information regarding terminal employment, and assumptions about trips generated per employee. Car traffic was distributed over the course of the day according to traffic counts on roads within the Port of Oakland. These counts were provided by Dowling Associates.

2. Analysis Data and Assumptions

2.1 THROUGHPUT

1995 THROUGHPUT

Table 2.1 shows statistics about the container terminals at the Port of Oakland for 1995. There were approximately 1.75 twenty-foot equivalent units (TEUs) per container, indicating that approximately 75% of containers were 40 feet long and 25% of containers were 20 feet long.

		Gross	1995	Thruput	Thruput
Zone	Terminal	Area	Thruput	per Gross	per Gross
		(acres)	(ship lifts)	Acre	Acre
				(conts)	(TEUs)
Zone 6	APL	82.8	162,407	1,961	3,433
(Middle Harbor)	Howard	48.9	94,359	1,930	3 <i>,</i> 375
Subtotal		131.7	256,766	1,950	3,413
Zone 7	TraPac	34.6	39,377	1,138	1,992
(7th Street)	Matson	65.5	93,158	1,422	2,490
	MTC	56.6	136,301	2,408	4,215
Subtotal		156.7	268,836	1,716	3,003
Zone 8	Sea Land	65.5	111,146	1,697	2,970
(Outer Harbor)	Yusen	40.0	83,502	2,088	3,650
	Maersk	45.7	71,031	1,554	2,970
	TransBay	29.2	57,255	1,961	3,436
Subtotal		180.3	322,934	1,791	3,134
Total	····	468.7	848,536	1,810	3,168

Table 2.1 1995 Terminal Statistics

The Port as a whole handled about 1,500,000 stevedoring TEUs with 470 gross acres of marine terminal, or 3,200 TEUs per acre per year.

1996 THROUGHPUT

The 1996 throughput volume was calculated by increasing the 1995 throughput at each terminal by an assumed growth rate of 7%.

2010 THROUGHPUT

Throughput volume for 2010 was estimated based on the container shipping growth projections from the Seaport Plan. The future container volumes were expressed in terms of metric tons of cargo per year instead of the more common TEUs.

Table 2.2 converts the projections from the Seaport Plan into containers based on the ratio of containers to forecast tonnage in 1995.

Year	1995	2000	2005	2010
Metric Tons	11,191,000	14,334,000	18,282,000	22,227,000
Containers	848,536	1,086,848	1,386,197	1,685,319
Annual Growth		5.1%	5.0%	4.0%

Table 2.2 Container Volume Forecast - Seaport Plan

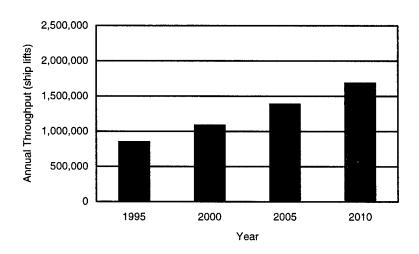


Figure 2.1
Projected Container Traffic - Seaport Plan

2.2 OVER-THE-ROAD VS. RAIL TRAFFIC

When containers arrive in the Port they either travel to their ultimate destination by truck or are drayed by truck to nearby intermodal rail yards for inland transport. For purposes of this traffic study, these two types of moves are referred to as "Over the Road" (OTR) and "Rail" moves.

OTR containers have destinations in the area served by the Port of Oakland. JWD assumed that these containers will continue to arrive in the San Francisco Bay ports regardless of future development at the Port of Oakland.

Rail moves are bound for final destinations as far away as the East Coast. The volume of this traffic moving through the Port of Oakland will depend on the attractiveness of Oakland as a rail gateway compared with other West Coast ports.

The Port of Oakland Joint Intermodal Terminal Operational Analysis Report (January, 1995) indicates that 148,500 containers used rail facilities in the Port of Oakland in 1994, corresponding to roughly 20% of total Port throughput. OTR moves comprised the remaining 80% of ship lifts in 1994.

The Seaport Plan makes no mention of the relationship between OTR and Rail traffic. JWD assumed that OTR traffic would constitute 80% of the Seaport Plan projected container traffic.

If the Port improves its attractiveness to Rail traffic by building the JIT, Rail traffic through Oakland would likely increase. Similarly, Rail traffic would decrease if terminals become congested by OTR moves.

The upper bound on Rail traffic through the Port of Oakland was calculated as the minimum of:

- 1. The capacity of nearby railyards. The estimated capacity of the Joint Intermodal Terminal in 2010 has been set at 1.2 million lifts per year.
- 2. The capacity of the marine terminals. JWD estimated the capacity of terminals at the Port of Oakland in 2010 as 4,700 TEUs, or 2,685 ship lifts, per acre per year. This is 500 TEUs per acre more than the busiest terminal handled in 1996.
- 3. The potential market for intermodal cargo. This factor is perhaps the most difficult to estimate but JWD projects the fraction of Port traffic that moves by rail will not be higher than 40% of the total traffic in 2010. This is twice the Rail traffic ratio that the Port experienced in 1994.

The lower bound on rail demand was set at 5% of the total marine terminal traffic, reflecting a portion of maritime traffic that would move by rail through the Port of Oakland regardless of congestion caused by OTR demand.

PORT CAPACITY

Table 2.3 illustrates the total capacity of each of the proposed development Options, based on 4,700 TEUs per acre per year. The terminal acreage within the Outer Harbor, 7th Street, and Middle Harbor Zones remains the same between 1996 and 2010 for Options A, C, and D, and the No-Build Option. Terminals are developed within the New Terminal Area Zone in Options A, B, C, and D. In Option B, an additional 22 acres of terminal are developed in the Outer Harbor Zone.

Zone	No-Build	Option A	Option B	Option C	Option D
1 - New Terminal Area	0	260	100	290	278
6 - Middle Harbor	132	132	132	132	132
7 - 7 th Street	157	157	157	157	157
8 - Outer Harbor	180	180	202	180	180
Total Acreage	469	729	591	<i>7</i> 59	747
Total Capacity (moves)	1,260,000	1,960,000	1,590,000	2,040,000	2,010,000

Table 2.3
Terminal Acreages and Capacities

Figure 2.2 depicts the terminal acreages graphically. Figure 2.3 depicts the terminal capacities graphically.

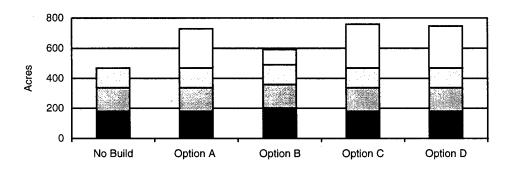


Figure 2.2 Terminal Acreages

■Outer Harbor ■7th Street □Middle Harbor □New Terminal Area

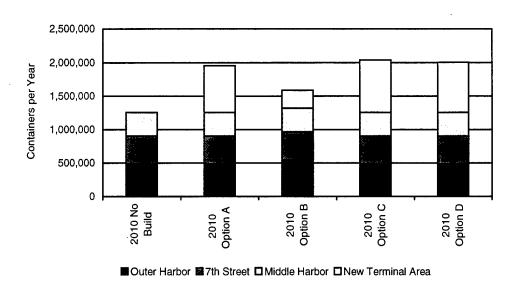


Figure 2.3 Terminal Capacities

Figure 2.4 shows the relationship between capacities for the various options, the lower-bound potential demand, and upper-bound demands #1 and #3.

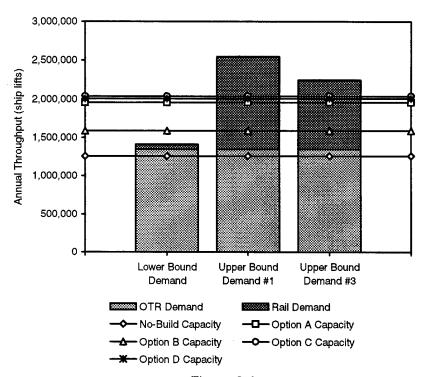


Figure 2.4
Port Capacity vs. Potential 2010 Demand

Figure 2.4 shows:

The OTR demand in 2010 exceeds the marine terminal capacities of the No-Build Option.

The upper-bound demands fixed by the JIT capacity (#1) and the rail market potential (#3) will exceed the capacities of all options.

These relationships imply that Rail demand in 2010, and therefore Port demand, will be limited by the overall capacities of the marine terminals, as summarized in Table 2.3, rather than by the other factors.

Table 2.4 summarizes the 2010 total demand, and its breakdown into OTR and Rail traffic, for each option. For the No-Build Option, it was assumed that all but 5% of Rail traffic would be handled by other Ports. In addition, it should be noted that about 152,000 OTR lifts in the No-Build Option would be handled at other Bay Area Ports such as Richmond or San Francisco.

Zone	No-Build	Option A	Option B	Option C	Option D
OTR Traffic - Oakland	1,196,000	1,348,000	1,348,000	1,348,000	1,348,000
Rail Traffic - Oakland	64,000	612,000	242,000	692,000	662,000
Total Traffic - Oakland	1,260,000	1,960,000	1,590,000	2,040,000	2,010,000
Rail / Total Traffic - Oakland	5.0%	31.2%	15.2%	33.9%	32.9%
OTR Traffic -Other Bay Ports	152,000	0	0	0	0

Table 2.4
Projected Port Traffic 2010

2.3 TRUCK TRAFFIC

Peak truck traffic was calculated for 1996 and 2010 based on several assumptions regarding terminal operations drawn from historical data and JWD's experience and professional judgment.

Gate Operating Schedule: Terminals gates were assumed to operate 52 weeks per year and five days per week.

Peak Week Factor: The peak week has 1.25 times as many ship lifts as the average week.

Gate Transactions to Ship Lift Ratio: Each ship lift generates 1.33 container transactions through the gate. The ratio is not 1.0 because the marine terminals act as storage depots for empty containers that may move in and out of the terminal without generating a ship lift, as shown in Figure 2.5.

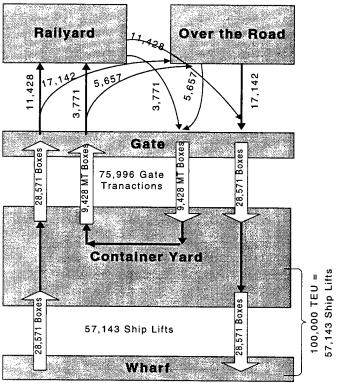


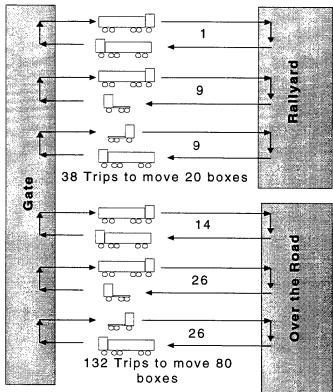
Figure 2.5
Container Flow at the Port of Oakland, 2010

Truck Trips to Gate Transactions Ratio: Each gate transaction in 1996 generates an average of 1.7 truck trips. Truck trips include trucks that enter or leave the terminal with or without a container. The ratio is not 2.0 because some trucks both deliver and retrieve containers from the terminal in a single visit as described in Table 2.5 and Figure 2.5. The fraction of OTR vs. Rail trips (and therefore the overall weighted average of truck trips per gate transaction) will vary with each development alternative.

	1996		20	10
	OTR	Rail	OTR	Rail
Fraction of Ship Lifts	80%	20%	Variable	Variable
Fraction of Hauls 1-way	65%	90%	65%	90%
Fraction of Hauls 2-way	35%	10%	35%	10%
Truck Trips per Gate	1.65	1.90	1.65	1.90
Transaction				

Table 2.5
Truck Trips per Gate Transaction

Figure 2.6 describes the 80%/20% split found in 1996 as an illustration of the relationship between truck trips and gate transactions.



Total: 170 trips to move 100 boxes

Figure 2.6
Gate Transactions vs. Truck Trips

Table 2.6 shows how these factors were used to estimate truck trips for the Port in 2010 under each development option.

Item	Factor	No Build	A	В	C	D
Annual Thruput		1,258,925	1,957,211	1,586,582	2,037,782	2,005,554
Weekly Thruput	1/52	24,210	37,639	30,511	39,188	38,568
Pk Week Thruput	1.25	30,263	47,048	38,139	48,985	48,210
Avg Day Thruput	1/5	6,053	9,410	7,628	9,797	9,642
Daily Gate Moves	1.33	8,050	12,515	10,145	13,030	12,824
OTR Fraction		95.0%	68.9%	85.0%	66.2%	67.2%
Rail Fraction		5.0%	31.1%	15.0%	33.8%	32.8%
Gate moves OTR		7,647	8,621	8,621	8,621	8,621
Gate moves to Rail		402	3,894	1,524	4,409	4,203
Trips OTR	1.65	12,618	14,225	14,225	14,225	14,225
Trips to Rail	1.90	765	7,398	2,895	8,377	<i>7,</i> 986
Total Truck Trips		13,383	21,623	17,120	22,602	22,210

Table 2.6
Calculation of 2010 Daily Truck Trips from Annual Throughput

Peak truck trips were calculated for each zone based on the acreages of each zone. Table 2.7 shows the fraction of total Port area at each Zone and Table 2.8 shows the number of truck trips generated by each zone. Figure 2.7 shows the calculated daily truck trips by zone.

Zone	2010	2010	2010	2010	2010
	No Bld	Opt A	Opt B	Opt C	Opt D
1 - New Terminal Area	0.0%	35.7%	16.9%	38.2%	37.2%
6 - Middle Harbor	28.1%	18.1%	22.3%	17.4%	17.6%
7 - 7th Street	33.4%	21.5%	26.5%	20.6%	21.0%
8 - Outer Harbor	38.5%	24.8%	34.3%	23.8%	24.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.7
Fraction of Port Area in Each Zone - 2010

Zone	2010	2010	2010	2010	2010
	No Bld	Opt A	Opt B	Opt C	Opt D
1 - New Terminal Area	0	7,715	2,898	8,639	8,268
6 - Middle Harbor	3,760	3,908	3,817	3,923	3,917
7 - 7th Street	4,473	4,648	4,540	4,667	4,660
8 - Outer Harbor	5,150	5,352	5,865	5,373	5,365
Total Truck Trips	13,383	21,623	17,120	22,602	22,210

Table 2.8 2010 Daily Truck Trips During Peak Week

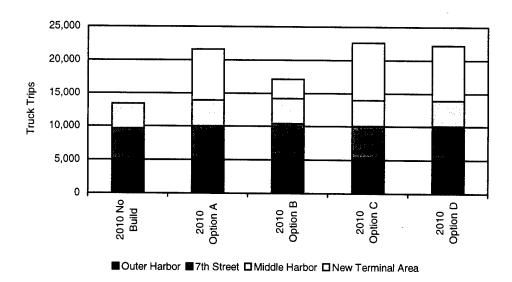


Figure 2.7
2010 Daily Truck Trips During Peak Week

2.4 TRUCK ARRIVAL AND DEPARTURE PATTERNS

Truck arrival and departure patterns were used to distribute daily truck trips over the course of the day. A truck arrival pattern observed at MTC's 7th Street terminal was used as the arrival pattern for all terminals. MTC's 7th Street terminal gate operates during the day only. This is the current practice at the Port of Oakland terminals and it was assumed to continue into 2010. The truck arrival pattern was applied to the total daily truck arrivals estimated for each terminal to distribute Port truck trips by hour.

A truck departure pattern was estimated from the truck arrival pattern, assuming that truck departures would take place 30 minutes after arrival.

Figures 2.8 and 2.9 respectively show the arrival and departure patterns of truck trips. Traffic is heavy after the terminal opens, is light during lunch, and trails off toward gate closing time.

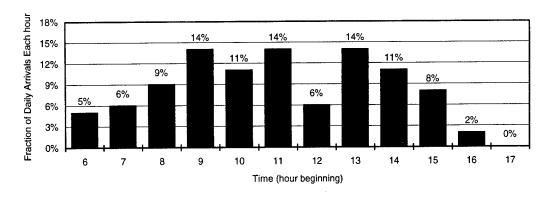


Figure 2.8 Truck Arrival Pattern

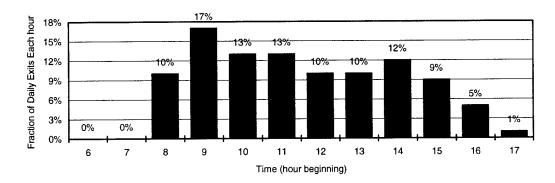


Figure 2.9
Truck Departure Pattern

2.5 PORT CAR TRIP GENERATION

The calculation of car trips to and from the terminals was based on terminal acreage, an estimate of the number of employees per acre, and the number of daily car trips per employee.

EMPLOYMENT AT TERMINALS

In 1996, in a "unit" terminal of 50 acres, JWD estimates that 120 employees work the day shift and 55 work the night shift when a ship is on berth. When there is no ship on berth, 60 employees work the day shift and 0 work the night shift.

The number of employees working the "unit" (50-acre terminal) is expected to increase at the same rate as the increase in terminal productivity (2.6% per year). This employment information is presented in Table 2.9.

	Ship on	Berth	No Ship o	n Berth
Year	Day	Night	Day	Night
1996	120	55	60	0
2010	172	79	86	0

Table 2.9
Marine Terminal Employment

During peak periods, JWD estimates that two-thirds of the terminals will have a ship on-berth.

DAILY CAR TRIPS

Table 2.10 shows the number of daily car trips generated based on the employment at a 50-acre unit terminal, and assumes an average of 3.5 employee trips per day. This estimate considers the fact that nearly all marine terminal employees drive alone to work. In addition, many employees leave the terminal during lunch. Terminal visitors also generate some auto trips.

Fraction of Time	Ship on Berth 2/3	No Ship on Berth 1/3	Average
Year			
1996	613	210	478
2010	877	301	685

Table 2.10
Peak Daily Car Trip Generation for a 50-Acre Terminal Unit

DISTRIBUTION OF CAR TRIPS

The distribution of car trips throughout the day, shown in Table 2.11, reflects employees' work schedules. These fractions were derived from traffic counts on Port of Oakland roads taken by Dowling Associates. The percentage indicates what fraction of the total daily auto trips occur as an entry or exit in the given hour.

	Entries to	Exits from
	Terminal	Terminal
0600 - 0700	7.3%	0.4%
0700 - 0800	8.4%	0.4%
0800 - 0900	4.9%	0.3%
0900 - 1000	4.2%	0.5%
1000 - 1100	3.2%	2.1%
1100 - 1200	3.4%	3.4%
1100 - 1300	3.7%	3.7%
1300 - 1400	3.1%	3.1%
1400 - 1500	1.3%	5.1%
1500 - 1600	0.4%	7.6%
1600 - 1700	0.4%	7.4%
1700 - 1800	0.7%	5.9%_
0600 - 1800	41.0%	39.9%

Table 2.11
Car Trip Distribution

Figure 2.10 illustrates the distribution of car trips.

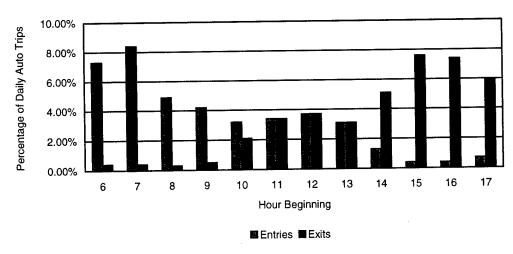


Figure 2.10
Distribution of Car Trips Throughout Day

3. Analysis Results

This section summarizes the results for both truck and auto trips in order to estimate total marine terminal traffic in 1996 and 2010.

3.1 1996 TRAFFIC

Table 3.1 shows peak truck trips for existing zones for key hours during the day broken down by entries and exits.

Zone:	6 - Middle F	Iarbor	7 - 7th Street		8 - Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits
0600-0700	73	0	76	0	91	0
0700-0800	90	0	94	0	113	0
0800-0900	140	149	147	156	176	188
0900-1000	206	252	216	264	259	317
1000-1100	169	187	177	196	212	236
1100-1200	213	191	223	200	268	240
1200-1300	88	150	92	157	110	189
1300-1400	209	149	219	156	263	187
1400-1500	160	185	168	194	202	233
1500-1600	115	138	120	144	144	173
1600-1700	30	73	32	76	38	91
1700-1800	0	15	0	16	0	19

Table 3.1

1996 Peak - Daily Truck Trips During Peak Week by Zone

Table 3.2 describes the total peak truck traffic moving to and from the rail yards in 1996.

	Total Truck	Truck Trips
	Trips	for Rail Yard
Middle Harbor (6)	2,987	668
7th Street (7)	3,127	699
Outer Harbor (8)	3,756	840
Total	9,870	2,207

Table 3.2

1996 Peak - Daily Truck Traffic During Peak Week to Rail Yard

Table 3.3 shows the distribution of peak car trips associated with Port employment in 1996.

Zone:	6 - Middle I	Harbor	7 - 7th St	reet	8 - Outer H	8 - Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits	
0600-0700	93	5	110	6	127	7	
0700-0800	106	6	126	7	145	8	
0800-0900	62	3	73	4	85	4	
0900-1000	52	6	62	7	72	8	
1000-1100	40	27	48	32	55	37	
1100-1200	43	43	51	51	58	58	
1200-1300	47	47	56	56	64	64	
1300-1400	39	39	46	46	53	53	
1400-1500	16	65	19	77	22	89	
1500-1600	5	96	6	114	7	131	
1600-1700	5	94	6	112	7	128	
1700-1800	8	74	10	88	11	101	

Table 3.3 1996 Peak - Daily Car Trips During Peak Week by Zone

Table 3.4 and Figure 3.1 illustrate the distribution of peak truck and car trips for the Port as a whole throughout the day.

	Truck	Truck	Total	Car	Car	Total
	Entries	Exits	Truck	Entries	Exits	Car
			Trips			Trips
0600-0700	240	0	240	329	17	347
0700-0800	296	0	296	376	20	396
0800-0900	463	493	957	220	12	231
0900-1000	681	834	1,515	187	21	208
1000-1100	558	620	1,178	143	95	238
1100-1200	703	631	1,334	152	152	304
1200-1300	290	497	787	167	167	334
1300-1400	692	491	1,183	138	138	277
1400-1500	530	611	1,142	58	231	288
1500-1600	380	455	835	18	341	359
1600-1700	100	240	341	18	334	351
1700-1800	0	50	50	29	262	292

Table 3.4

1996 Peak - Daily Truck and Car Trips During Peak Week by Hour of Day for the Whole Port

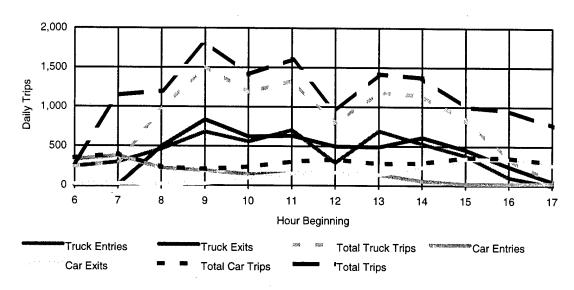


Figure 3.1 1996 Peak - Daily Port Car and Truck Trips During Peak Week

3.2 2010 TRAFFIC

Tables 3.5 through 3.9 describe peak daily truck and car traffic for each option in 2010.

Zone:	1		6		7		8	
	New Ter	minal	Middle I	Iarbor	7th Str	eet	Outer H	arbor
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	0	0	113	0	134	0	154	0
8-9	0	0	177	188	210	224	242	257
9-10	0	0	259	318	309	378	355	435
10-11	0	0	213	236	253	281	291	323
11-12	0	0	268	240	319	286	367	329
12-13	0	0	111	189	132	225	151	259
13-14	0	0	264	187	314	223	361	256
14-15	0	0	202	233	240	277	277	319
15-16	0	0	145	173	172	206	198	237
16-17	0	0	38	91	46	109	52	125
17-18	0	0	0	19	0	23	0	26
CARS								
7-8	0	0	151	8	180	9	207	11
8-9	0	0	88	5	105	6	121	6
9-10	0	0	75	8	89	10	103	11
10-11	0	0	57	38	68	46	79	52
11-12	0	0	61	61	73	73	84	84
12-13	0	0	67	67	80	80	92	92
13-14	0	0	56	56	66	66	76	76
14-15	0	0	23	93	28	110	32	127
15-16	0	0	7	137	9	163	10	188
16-17	0	0	7	134	8	160	10	184
17-18	0	0	12	106	14	126	16	145

Table 3.5

Daily Trips During Peak Week - No-Build Option

Zone:	1		6		7		8	
	New Ter	minal	Middle F	Iarbor	7th Street		Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7 - 8	231	0	117	0	139	0	160	0
8-9	362	386	183	195	218	232	251	268
9-10	532	652	270	330	321	393	369	452
10-11	436	484	221	245	263	292	303	336
11-12	550	493	279	250	331	297	381	342
12-13	227	388	115	197	137	234	157	269
13-14	541	384	274	195	326	231	375	266
14-15	415	478	210	242	250	288	288	331
15-16	297	356	150	180	179	214	206	247
16-17	79	188	40	95	47	113	54	130
17-18	0	39	0	20	0	24	0	27
CARS								
7-8	299	16	151	8	180	9	207	11
8-9	175	9	88	5	105	6	121	6
9-10	148	16	75	8	89	10	103	11
10-11	113	76	57	38	68	46	79	52
11-12	121	121	61	61	73	73	84	84
12-13	133	133	67	67	80	80	92	92
13-14	110	110	56	56	66	66	76	76
14-15	46	183	23	93	28	110	32	127
15-16	14	271	7	137	9	163	10	188
16-17	14	265	7	134	8	160	10	184
17-18	23	208	12	106	14	126	16	145

Table 3.6
Daily Trips During Peak Week - Option A

Zone:	1		6		7		. 8	
	New Ter	minal	Middle H	Iarbor	7th Street		Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	87	0	114	0	136	0	176	0
8-9	136	145	179	191	213	227	275	293
9-10	200	245	263	323	313	384	405	496
10-11	164	182	216	240	257	285	332	368
11-12	207	185	272	244	324	290	418	375
12-13	85	146	112	192	134	229	173	295
13-14	203	144	268	190	318	226	411	292
14-15	156	179	205	236	244	281	315	363
15-16	111	134	147	176	175	209	226	270
16-17	30	70	39	93	46	110	60	143
17-18	0	15	0	19	0	23	0	30
CARS								
7-8	115	6	152	8	180	9	232	12
8-9	67	4	89	5	105	6	136	7
9-10	57	6	<i>7</i> 5	8	89	10	116	13
10-11	44	29	58	38	68	46	88	59
11-12	46	46	61	61	73	73	94	94
12-13	51	51	67	67	80	80	103	103
13-14	42	42	56	56	66	66	86	86
14-15	18	70	23	93	28	110	36	143
15-16	5	104	7	138	9	163	11	211
16-17	5	102	7	135	8	160	11	206
17-18	9	80	12	106	14	126	18	162

Table 3.7
Daily Trips During Peak Week - Option B

Zone:	1		6		7		. 8	
	New Ter	minal	Middle F	larbor	7th St	reet	Outer H	arbor
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	259	0	118	0	140	0	161	0
8-9	406	432	184	196	219	233	252	269
9-10	596	730	271	332	322	394	371	454
10-11	489	542	222	246	264	293	304	337
11-12	616	552	280	251	333	298	383	343
12-13	254	435	115	197	137	235	158	270
13-14	606	430	275	195	327	232	377	267
14-15	464	535	211	243	251	289	289	333
15-16	332	398	151	181	179	215	207	248
16-17	88	210	40	95	48	113	55	131
17-18	0	44	0	20	0	24	0	27
CARS								
7-8	333	18	151	8	180	9	207	11
8-9	195	10	88	5	105	6	121	6
9-10	166	18	<i>7</i> 5	8	89	10	103	11
10-11	127	84	57	38	68	46	79	52
11-12	134	134	61	61	73	73	84	84
12-13	148	148	67	67	80	80	92	92
13-14	123	123	56	56	66	66	76	76
14-15	51	204	23	93	28	110	32	127
15-16	16	303	7	137	9	163	10	188
16-17	16	296	7	134	8	160	10	184
17-18	26	232	12	106	14	126	16	145

Table 3.8
Daily Trips During Peak Week - Option C

Zone:	1		6		7		. 8	
	New Ter	minal	Middle F	larbor	7th Sti	reet	Outer H	arbor
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	248	0	117	0	140	0	161	0
8-9	388	413	184	196	219	233	252	268
9-10	571	699	270	331	322	394	370	453
10-11	468	519	222	246	264	293	303	337
11-12	589	528	279	250	332	298	382	343
12-13	243	416	115	197	137	235	158	270
13-14	580	412	275	195	327	232	376	267
14-15	444	512	210	243	250	289	288	332
15-16	318	381	151	181	179	215	206	247
16-17	84	201	40	95	47	113	55	130
17-18	0	42	0	20	0	24	0	27
CARS								
7-8	319	17	151	8	180	9	207	11
8-9	187	10	88	5	105	6	121	6
9-10	159	18	<i>7</i> 5	8	89	10	103	11
10-11	121	81	57	38	68	46	79	52
11-12	129	129	61	61	73	73	84	84
12-13	142	142	67	67	80	80	92	92
13-14	118	118	56	56	66	66	76	76
14-15	49	196	23	93	28	110	32	127
15-16	15	290	7	137	9	163	10	188
16-17	15	284	7	134	8	160	10	184
17-18	25	223	12	106	14	126	16	145

Table 3.9
Daily Trips During Peak Week - Option D

Figure 3.2 illustrates the total truck trips and automobile trips for the different options.

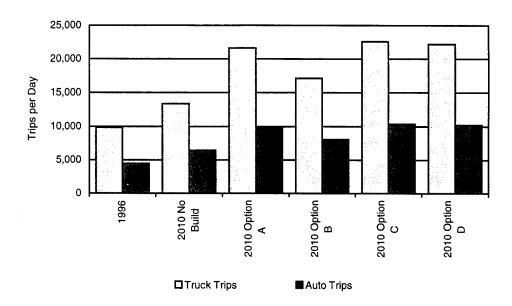


Figure 3.2
Daily Truck and Car Trips During Peak Week

Table 3.10 describes the total daily truck traffic during a peak week that moves from the zones to nearby rail yards in 2010.

Zone	1	6	7	8	
	NT	MH	7th St	ОН	Total
NO-BUILD OPTION					·
Total Truck Trips	0	3,760	4,473	5,150	13,383
Truck Trips to Rail Yard	0	215	256	294	765
OPTION A					
Total Truck Trips	<i>7,7</i> 15	3,908	4,648	5,352	21,623
Truck Trips to Rail Yard	2,640	1,337	1,590	1,831	7,398
OPTION B					
Total Truck Trips	2,898	3,817	4,540	5,865	17,120
Truck Trips to Rail Yard	490	646	768	992	2,895
OPTION C					
Total Truck Trips	8,639	3,923	4,667	5,373	22,602
Truck Trips to Rail Yard	3,202	1,454	1,730	1,992	8,377
OPTION D					
Total Truck Trips	8,268	3,917	4,660	5,365	22,210
Truck Trips to Rail Yard	2,973	1,408	1,675	1,929	7,986

Table 3.10 2010 Daily Truck Traffic During Peak Week

Figure 3.3 illustrates the total daily truck trips and trips to the Rail Yards for each option.

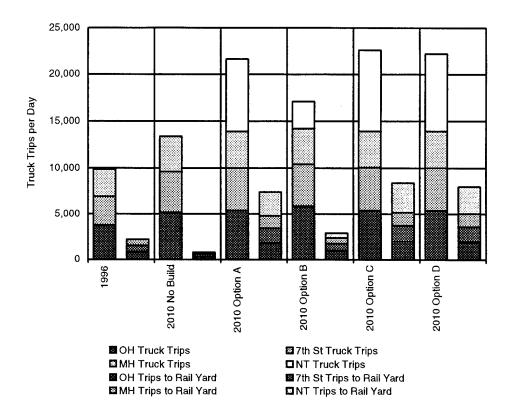


Figure 3.3
Daily Truck Trips During Peak Week

APPENDIX A: PROJECTED SHIP CALLS AT THE PORT OF OAKLAND IN 2010

JWD has estimated future ship call statistics based on data from 1988 through 1995 provided by the Port of Oakland. Statistics on lifts per call are shown in Figure A.1.

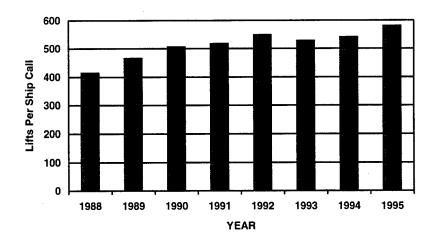


Figure A.1
Lifts per Ship Call at the Port of Oakland

The growth in lifts per ship call from 1988 to 1995 represents an annual growth rate of 4.9~%. Assuming this trend continues until 2010, the average ship call in 2010 will consist of 1196 ship lifts.

Presently, most of the container ships that call at the Port of Oakland are in the 2500 to 4000 TEUs capacity range. In general, ship sizes will increase in the future. Ships that call at Oakland may or may not increase accordingly with the world fleet as depth limitations may prohibit large ships from calling at Oakland. The largest ships in the world have a capacity of approximately 6000 TEUs and a depth requirement of about 45 feet. The channel into the Port of Oakland is presently about 40 to 42 feet deep. The Port plans to dredge the channel in order to accept larger ships. This should allow the number of ship lifts per call to continue to grow as predicted.

The ship call size of 1196 lifts was used to compute the expected number of ship calls for each of the project alternatives shown in Table A.1.

Option	Lifts per Year	Ship Calls per Year	Ship Calls per Day
1995	848,536	1,460	4.0
No Build	1,258,925	1,053	2.9
Α	1,957,211	1,637	4.5
В	1,586,582	1,327	3.6
С	2,037,782	1,704	4.7
D	2,005,554	1,678	4.6

Table A.1
Ship Calls by Project Option

Assuming each ship is worked by two dockside cranes for two shifts per day and that the dockside crane productivity remains about 24 lifts per hour as it is today, each ship will be worked for an average of 1.6 days. Ships will spend longer than this in port due to docking and tie down time as well as other miscellaneous delays. Ships will be in Port for an average of two days per call, provided the Port continues to work ships seven days per week.

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Appendix J.3 Rail Terminal Traffic Analysis

PART ONE OF RAIL TERMINAL TRAFFIC ANALYSIS

FLEET INDUSTRIAL SUPPLY CENTER OAKLAND DISPOSAL AND REUSE EIS/EIR

JOB NO. WC0337 PHASE 03

CONTENTS: PLATE 1 - SHOWING THE CAPACITY OF EACH RAIL TERMINAL EXISTING UNDER EACH ALTERNATIVE OPERATING THREE SEPARATE LEVELS OF EFFICIENCY. ALSO, THE PROJECTED EXTIMATED NUMBER OF GATE MOVES AND TRUCK TRUCK TRIPS THAT WOULD BE REQUIRED TO OPERATE EACH TERMINAL AT EACH OF THOSE LEVELS.

The assumptions made to generate the numbers are given at the bottom of the table. The assumptions are based on information obtained from existing rail terminals and model terminals that have been conceptually designed under previous studies.

November 5, 1996



			F	PLATE I	- TRAFF	IC EST	MATES	TO & F	ROM
ALTERNATIVE	ANNUAL LIFTS (CAPACITY)				TOTAL (I) ANNUAL GATE MOVES (CAPACITY)			ACITY)	TOTAL D'LY GA
	(in thousands)				LIFTS the de	(per day)			MOVE
	OPERATION				(CAPACITY)	UP SP BNSF			(CAPACI
		(a)	(p)	(c) Richmind				(Richmond)	
CURRENT	CURRENT	102	158	24	284	431	667	101	1,199
		(d)	(e)	(c)					
	SUSTAINABLE	135	250	24	409	570	1,056	101	1,727
		(d)	(e)	(c)					
	CONSTRAINED	154	300	24	478	650	1,267	101	2,018
		(d)	(e)	(c) Richm'nd					
	SUSTAINABLE	135	250	24	409	570	1,056	101	1,727
NO BUILD		(d)	(e)	(c)					
(ALT E)	CONSTRAINED	154	300	24	478	650	1,267	101	2,018
		(d)	(e)	(c)			4.540	454	2.00
	GRIDLOCKED	194	359	24	577	819	1,516	101	2,43
			()						F 24
٨	SUSTAINABLE	1,242			1,242	5,244			5,24
		(j) 1.150			4.450	6,156			6,15
	CONSTRAINED		1,458		1,458	6,136			1
-	GRIDLOCKED		(j) 1,782		1,782	7,524			7,52
	GRIDGERED	(d)		(i) Port	1,702	 	7	T	-
	SUSTAINABLE	(d) 135	(f) 252	386	773	570	1,064	1,630	3,26
В	BOSTANABLE	(d)	(f)	(i)	1	3.0	1,52		1
	CONSTRAINED	154	276	429	859	650	1,165	1,811	3,62
		(d)	(f)	0					
Į.	GRIDLOCKED	194	361	554	1,109	819	1,524	2,339	4,68
			(g)	(h) Port		(Port		(Port)	
С	SUSTAINABLE 609				1,209	2,571		2,533	5,10
		(g)		(h)					
	CONSTRAINED	66C		650	1,310	2,787 2,		2,744	5,53
		(g)		(h)				`	
	GRIDLOCKED	874		860	1,734	3,690 3,63		3,631	7,30
		(k)							
I	SUSTAINABLE				1,156	4,881			4,8£
D	(k)								
	CONSTRAINED				1,357	5,730			5,7;
ı		(k)				7 000			
	GRIDLOCKED	1	1,658		1,658	7,000			7,00

- (a) Very recent figure obtained from UP.
- (b) Very recent figure obtained from SP.
- (c) 15% of total 160,000 lifts recently obtained from BN/SF (15% attributable to Port of Oakland).
- (d) Joint Intermodal Teriminal (JIT) Operational Analysis Report, page 39.
- (e) JIT Operational Analysis Report, page 42 (adjusted for lift demand Alt E).
- (f) Preliminary Draft, Proposed Expanded Southern Pacific Intermodal Terminal Version 3.
- (g) Preliminary Draft, Proposed Expanded Southern Pacific Intermodal Terminal Version 2.
- (h) JIT Operating Plan Report, page 57 (based on track under crane).
- (i) JIT Operating Plan Report, page 57 (reducing track under crane by tracks #6 and #7, lost to support tracks). Note: It is assumed that under Alternate B the rail terminal facilities would expand capacity in accordance with the demand for lifts, and there would be close to a 50/50 split betweem UP (merged) and BNSF.
- (j) JIT Operating Plan Report, page 2 of Appendix A.

- (k) JIT Ope
- (I) Average
- (m) The nui Note: A
- (n) The num the num
- Notes:
- A. Under *
- 3. Gridi B. Gate M
- C. The tait

) & FROM INTERMODAL FACILITIES (RR)											
	TOTAL		(m)		TOTAL		TOTAL				
γ	D'LY GATE	DAILY TRUCK TRIPS			DAILY		RAIL				
	MOVES	Based on Gate Moves		oves	TRUCK	Based on Lifts (Capacity)			TERMINAL		
NSF	(CAPACITY)	UP	SP	BNSF	TRIPS	UP	SP	BNSF	JOBS		
nmond)				(Richmond)							
101	1,199	689	1, 06 7	162	1,919	55	72	N/A	127		
101	1,727	912	1,689	162	2,763	67	107	N/A	174		
101	2,018	1,040	2,027	162	3,229	70	123	N/A	193		
				(Richmond)							
101	1,727	912	1,689	162	2,763	67	107	N/A	174		
101	2,018	1,040	2,027	162	3,229	70	123	N/A	193		
101	2,436	1,311	2,425	162	3,898	82	130	N/A	212		
											
	5,244	8,390			8,390		350				
							-				
	6,156	9,850			9,850		400				
:	7,524	12,038			12,038		427				
:				(Port)							
,630	3,264	912	1,702	2,608	5,222	67	150	167	384		
1,811	3,627	1,040	1,865	2,898	5,803	270	167	178	415		
2,339	4,682	1,311	2,439	3,743	7,492	82	183	204	469		
(Port)				(Port)							
2,533	5,105	4,114		4,053	8,167	210		208	418		
2,744	5,531	4,459		4,391	8,850	222		220	442		
,											
3,631	7,321	5,904		5,810	11,714	256 254		254	510		
	4,881	7,809		7,809	343			343			
	5,730	9,167			9,167	375			375		
	7,000	11,201			11,201		418				

- (k) JIT Operating Plan Report, page 2 of Appendix A (proportioned by track under crane).
- (I) Average daily gate moves calculated by dividing annual lifts by 350 days and multifplying by 1.52 gate moves/lift.
- (m) The number of daily truck trips is 1.6 times the Gate Moves, a factor thought to be conservatively high. Note: At rail terminals, moves through the gates involving empty chassis are counted as gate moves.
- (n) The number of employees are taken from known and modeled facilities, the jobs on site under gridlocked conditions are 1.43 times the number required for sustainable conditions minus 15% assumed constant (supervisors etc).
 Neter:
- A. Under "Annual Lifts" three levels of operation are referred to by the table: 1. Sustainable is near comfortable capacity wherein lift costs are minimized, 2. Constrained is beyond the comfortable capacity of the infrastructure and a premium is paid in cost per lift.
 - 3. Gridlocked is operating at maximum capacity with maximum effort.
- B. Gate Moves = Gate Transactions. They do not include truck tractors without chassis' or trailers (Bobtails).
- C. The table on page 2 shows comparison between lift capacities and demand (projected number of Int'l., domestic, & trailers.)

PART TWO OF RAIL TERMINAL TRAFFIC ANALYSIS

FLEET INDUSTRIAL SUPPLY CENTER OAKLAND DISPOSAL AND REUSE EIS/EIR

JOB NO. WC0337 PHASE 03

CONTENTS:	Pages 1 - 3	Show the estimated type and number of trains that will be travelling over those segments of railroad shown on the diagramatic map on PLATE 11, page 4 under each alternative.
	Page 4 - PLATE 11	Shows the total number of trains in each segment for each alternative and a diagramatic map of the railroad segments.
	Page 5	Describes the rationale used in estimating the number of intermodal trains that will be generated by the existing rail terminals under each alternative at the operating level predicted by JWD and tabulated by Dowling and Assoc.
	Pages 6 - 17	Show the gate down time at the crossings in each rail segment calculated by the formula shown and based on the estimated trains shown by pages 1 - 3.

The assumptions made to estimate the numbers of trains are based on information given by the various railroads, information taken from the recent Union Pacific/ Southern Pacific merger and previous studies.

November 5, 1996



ALTERNATIVE: CURRENT (POST-MERGER) (BELOW SUSTAINABLE)

							TRAIN	TRAIN TYPE							
Segment		EASTBOU	EASTBOUND (AWAY	Y FROM 7TH STREET	7TH S	TREET			WESTB	WESTBOUND (TOWARDS 7TH STREET)	JWARD	S 7TH	STREET)		TOTAL
	1200	009	0009	0009	6000 6000 1200	1200	300	1200	009	0009		0009 0009	1200	300	DAILY
	PASS		PASS BNSF-IM	TF-M	Σ	707	SW	PASS	PASS	PASS PASS BNSF-IM TF-M	TF-M	Σ	207	SW	TRAINS
4	2	8		4	7		•	2	8		3	3			32
В	2	8		4	7	**2	2	2	8		3	3	**2	2	40
ပ	2	8					2	2	8					2	24
D	£*	*13					2	G *	*13					2	40
Ш	*5	*13	-	2		2		S *	*13		2		2		44
i±.	-	3		2		2		1	3		2		2		16
	· INCLUE	DES DEADH	INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF	NGER TR	AIN MO	/EMENT	S BETWE	EN JLS A	IND PEMF		TF-M -	THRU	TF-M - THRU FREIGHT, MANIFEST	, MANIF	EST
	** BNSF TRAINS	TRAINS									M-M	TERMO	IM - INTERMODAL TRAIN	Z	
	PASS-	PASSEN	PASS - PASSENGER TRAI	z							7-207	OCAL	LOC - LOCAL FREIGHT TRAIN	TRAIN	
	BNSF-I	M - BURL	BNSF-IM - BURLINGTON N	NORTHERN SANTA FE INTERMODAL TRAIN	ERN SA	NTA FE	INTER	RMODAL	TRAIN		SW-SI	WITCHI	SW - SWITCHER TRAIN	7	

ALTERNATIVE:NO BUILD (GRIDLOCKED)

	TOTAL	DAILY	TRAINS	42	47	26	42	48	20
		300	SW		1	1	1		
	STREET)	1200	TOC		**2			2	2
	S 7YH	0009	Σ	S***	9				
	WARD	0009 0009	TF-M	5	4			2	2
	WESTBOUND (TOWARDS 7YH STREET	0009	PASS BNSF-IM TF-M						
	WESTB	009		10	10	10	*15	*15	5
TRAIN TYPE		1200	PASS	2	2	2	5 *	5 *	1
TRAIN	.)	300	SW		1	1	1		
	TREET	1200	TOC		7**			2	2
	S HL/	0009 0009	Σ	***	4				
	AY FROM 7TH STREET	0009	TF-M	4	4			2	2
	ND (AWA)	0009	BNSF-IM						
	EASTBOUND (AWA	009	PASS BNSF-IN	10	10	10	*15	*15	5
	Ш	1200	PASS	2	2	2	*5	*5	1
1	Segment								

^{*} INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

^{**} BNSF TRAINS (NO CHANGE FROM CURRENT POST-MERGER CONDITIONS)

^{***} CORRESPONDS TO THE 9 INTERMODAL TRAINS/DAY PER TRAIN ANALYSIS AND ASSUMPTIONS

ALTERNATIVE: A (SUSTAINABLE)

	WESTBOUND (TOWARDS 7TH STREET) TOTAL	300	IM LOC SW	4 5	4 5 **1 1 54	1 26	2 43	2 2 48	2 2 20
	JD (TOWAF	0009	SF-IM TF-N	4***	***				
	WESTBOUN	9 009	PASS BNSF-IM TF-M	10	10	10	*15	*15	2
TRAIN TYPE		1200	PASS	2	2	2	*5	* 3	-
TRAIN	REET)	300	SW		1.	-	-		
	(AY FROM 7TH STREET)	6000 6000 1200	200		L**			2	2
	SOM 7	0009	፮	5	2				
	WAY FF	0009		4	4			2	2
	EASTBOUND (AW.	0009	PASS BNSF-IM	***	***				-
	EASTB	009		10	10	10	*15	*15	9
		1200	PASS	2	2	2	*5	*5	_
	Segment			A	В	ပ	۵	ш	ட

INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

** BNSF TRAINS

*** ASSUMES BNSF HAS 40% TO 50% OF THE INTERMODAL TRAIN TRAFFIC

PASS - PASSENGER TRAIN BNSF-IM - BURLINGTON NORTHERN SANTA FE INTERMODAL TRAIN

LOC - LOCAL FREIGHT TRAIN SW - SWITCHER TRAIN

TF-M - THRU FREIGHT, MANIFEST

IM - INTERMODAL TRAIN

ALTERNATIVE: B (SUSTAINABLE)

l							TRAIN	TRAIN TYPE							
ļ	EAS	STBOL	EASTBOUND (AWAY		A 7TH S	FROM 7TH STREET			WESTB	WESTBOUND (TOWARDS 7TH STREET	OWARD	S 7TH	STREET)		TOTAL
U	1200 6	009	0009	0009	0009	6000 6000 1200	300	1200	009	0009	0009 0009	0009	1200	300	DAILY
	S P	ASS	PASS PASS BNSF-IM	TF-M	Σ	TOC	SW	PASS	PASS	PASS PASS BNSF-IM TF-M	TF-M	Σ		SW	TRAINS
	2	10	3	4	3			2	10	3	4	ဧ			44
	2	10	3	4	3	J**	1	2	10	3	4	3	1**	1	48
	2	10					1	2	10					1	26
	*5	*15					1	4.5	*15					1	42
	*5	*15		2		2		\$*	*15		2		2		48
	-	5		2		2		1	5		2		2		20
		1				1000 000			THE COURT OF THE CONTRACT OF T						

* INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

** BNSF TRAINS

ALTERNATIVE: C (CONSTRAINED)

							TRAIN	TRAIN TYPE							
Segment		ASTBOU	EASTBOUND (AWAY FROM 7TH STREET)	Y FROM	7TH S	TREET			WESTB	WESTBOUND (TOWARDS 7TH STREET)	WARD	S 7TH	STREET)		TOTAL
	1200	009	0009	0009	6000 1200		300	1200	009	0009	0009 0009	0009	1200	300	DAILY
	PASS		PASS BNSF-IM	TF-M	Σ	roc	SW	PASS	PASS	PASS BNSF-IM TF-M	TF-M	Σ	207	SW	TRAINS
4	2	10	2	4	4			2	10	5	4	5			51
В	2	10	5	4	4	1**	۲.1	2	10	5	4	2	**1	٢	25
ပ	2	10					1	2	10					-	26
۵	£*	*15						9*	*15					-	42
Е	4.5	*15		2		2		\$ *2	*15		2		2		48
LL.	-	9	-	7		2		1	2		2		2		20
	· INCLUE	ES DEADH	INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF	NGER TR	AIN MOV	/EMENT	S BETWE	EN JLS A	IND PEMF		TF-M -	THRUF	TF-M - THRU FREIGHT, MANIFEST	, MANIF	EST
	** BNSF TRAINS	TRAINS									IM - MI	LERMO	IM - INTERMODAL TRAIN	Z	
	PASS-	PASSEN	PASS - PASSENGER TRAIN	z							1-00T	OCAL I	LOC - LOCAL FREIGHT TRAIN	TRAIN	
	BNSF-I	BNSF-IM - BURLINGTON		JORTHE	RN SA	NTA FE	INTER	RMODAL	NORTHERN SANTA FE INTERMODAL TRAIN		SW - SI	WITCH	SW - SWITCHER TRAIN	7	

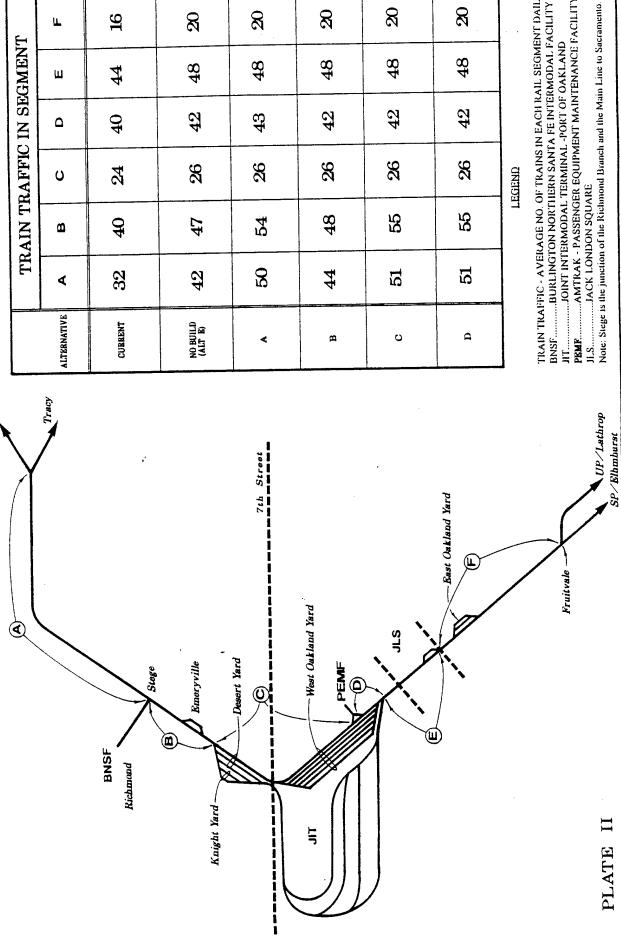
ALTERNATIVE: D (CONSTRAINED)

	TOTAL	DAILY	TRAINS	51	55	26	42	48	20
		300	SW		-	-	-		
	STREET)	1200	207		F**			2	2
	S 7TH 8	0009	Σ	9	9				
	WARD	0009 0009	TF-M	4	4			2	2
	WESTBOUND (TOWARDS 7TH STREET	0009	PASS PASS BNSF-IM TF-M	7 ***	7 ***				
	WESTB	009	PASS	10	10	10	*15	*15	5
TRAIN TYPE		1200	PASS	2	2	2	4 2	5 *	1
TRAIN)	300	SW		1	1	-		
	TREET	6000 6000 1200	707		1**			2	2
	I 7ТН S	0009	Σ	5	5				
		_							
	Y FRON	0009	TF-M	4	4			2	2
	ND (AWAY FROM 7TH STREET)	0009 0009	TF-M	b 4***	4 4***			2	2
	ASTBOUND (AWAY FROM	┢	PASS BNSF-IM TF-M	10 ***4 4	10 ***4 4	10	*15	*15	5 2
	EASTBOUND (AWAY FROM	0009	TF-M		2 10 ***4 4	2 10	*5 *15	*5 *15	1 5 2

^{*} INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

^{***} BNSF TRAINS

^{***} ASSUMES BNSF HAS 40% TO 50% OF THE INTERMODAL TRAIN TRAFFIC



Ţ	L	16	20	80	20	20	8
GMEN	Ш	44	48	48	48	48	48
IN SE	۵	40	42	43	42	42	42
AFFIC	v	24	26	56	26	56	26
TRAIN TRAFFIC IN SEGMENT	8	40	47	54	48	55	55
TR	4	32	42	22	44	51	51
	FERNATIVE	CURRENT	NO BUILD (ALT B)	∢	щ	၁	a

Sacramento

TRAIN ANALYSIS AND ASSUMPTIONS

A typical 6000 ft. train is assumed to carry an average of 8.75 trailers and 166.25 containers (175 vans). The trailers are most commonly carried on 89 ft. flatcars and a space utilization of approximately 80% is assumed. The containers are most commonly carried on doublestack platforms 61 ft. in length. A slot utilization factor of 1.83 containers per platform is used here because the Union Pacific used this factor for projecting numbers of intermodal trains in their recent merger application.

A rail terminal with a lift capacity of 100,000 annual lifts would require the following average number of trains per day.

100,000 divided by

360 days

divided by

175 equals

1.587302 trains/day

Using this model, the relative number of trains required for each of the rail terminals at the projected level of operation under each alternative follow:

Alternative	Facility	Lifts in	Function	Multiplier	Function	Ave. Dai	ly Trains
		Thousands					•
Current	UP	1.02	times	1.59	equals	1.62	trains/day
(Existing)	SP	1.58	times	1.59	equals	2.51	trains/day
	Richmond	0.24	tmes	1.59	equals	0.38	trains/day
	Merged UP					1 12	trains/des.
	Total					4.13	trains/day
No Build	Total					4.51	trains/day
Gridlock	υė	1.94	times	1.59	equals	2.00	traina/day.
J. J. J. J. J. J. J. J. J. J. J. J. J. J	SP	3.59	times	1.59	equals	3.08 5.70	•
	Richmond	0.24	tmes	1.59	equals		•
	rtioninona	0.24	unes	1.55	equais	0.38	trains/day
	Merged UP					8 78	trains/day
	Total					i .	trains/day
Alt A						0.10	daniorday
Sust'n'ble	JIT	11.40	times	1.59	equals	18.09	trains/day
					•		•
Alt B							
Sust'n'ble	UP	1.05	times	1.59	equals	1.67	trains/day
	SP	3.12	times	1.59	equals	4.96	•
	BNSFport	3.51		1.59	equals	5.57	trains/day
	44		!				
	Merged UP					6.63	trains/day
Alt C	Total					12.21	trains/day
1	 • • • • • • • • • • • • • • • • • •						
Constr'nd	Merged UP	6.05	times	1.59	equals	9.61	trains/day
	BNSFport	6.14	tmes	1.59	equals	9.75	,
A 14 D	Total					19.36	trains/day
Alt D	11.75	44.00					
Constr'nd	JIT	11.89	times	1.59	equals	18.87	trains/day

See "Traffic Estimates To & From Intermodal Facilities (RR)" for levels of operation, pg.1, Part 1.

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	-(1200/(1.47	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

1400	~~	- 00	60	60	15	-15	60	-40
Speed	60	-60		-60			00	-40
Segment		Α	E	3	:E	=	ļ	F
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Current	8-600	4.91	8-600	4.91	13-600	12.40	3-600	1.67
Eastb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	2-6000	3.27	2-6000	3.27	2-1200	2.81	2-1200	1.68
			2-1200	1.45				
			2-300	1.11				
Sub-Total		16.16		18.73		32.32		8.48
<u> </u>	Cuttin	g Blvd.	Gilman-	Bancroft	Marke	et-Oak	29th-37th	n Avenues
Speed			45	-45			40	-20
Segment				3				E
, ocgment			1				<u> </u>	Γ
Joginene			2-1200	1.60			1-1200	0.84
Jogmone					1		1-1200 3-600	0.84 2.01
Jogmon			2-1200	1.60			1	1
Oogmon		·	2-1200 8-600	1.60 5.21			3-600	2.01
Oogmone		· · · · · · · · · · · · · · · · · · ·	2-1200 8-600 4-6000	1.60 5.21 8.05			3-600 2-6000	2.01 7.80
Segment			2-1200 8-600 4-6000 2-6000	1.60 5.21 8.05 4.02			3-600 2-6000	2.01 7.80
Sub-Total			2-1200 8-600 4-6000 2-6000 2-1200	1.60 5.21 8.05 4.02 1.60			3-600 2-6000	2.01 7.80

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	+(1200/(1.47	'45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Speed	60	-60	60-	-60	15	-15	60	-40
Segment		A		3				=
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Current	8-600	4.91	8-600	4.91	13-600	12.40	3-600	1.67
Westb'nd	3-6000	4.90	3-6000	4.90	2-6000	10.07	2-6000	4.40
	3-6000	4.90	3-6000	4.90	2-1200	2.81	2-1200	1.68
			2-1200	1.45				
			2-300	1.11				
Sub-Total		16.16		18.73		32.32		8.48
	Cuttin	g Blvd.	Gilman-	Bancroft	Marke	et-Oak	29th-37th	Avenues
Speed			45	-45			40	-20
Segment				3		***************************************		F
			2-1200	1.60			1-1200	0.84
			8-600	5.21			3-600	2.01
			3-6000	6.04			2-6000	7.80
			3-6000	6.04			2-1200	2.36
			2-1200	1.60				
			2-300	1.15				
Sub-Total	67t	h,66th,65th 8	St's.	21.64		5th Avenue)	13.01
Totais	Cuttir	g Blvd.	Gilman-	Bancroft	Marke	et-Oak	29th-37th	n Avenues
East & We	st	32.33		37.46		64.63		16.96
From all T	rains		67th,66th	,65th St's.			5th A	venue
in Minutes	•			43.28				26.03

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	-(1200/(1.47*	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

Speed	60)-60	60-	-60	15	-15	60-40	
Segment		A	E	3		E	F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	
No Build	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Eastb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
			2-1200	1.45				
			1-300	0.56				
Sub-Total		20.66		22.67		34.22		8.87
	Cuttin	g Blvd.	Gilman-	Bancroft	Marke	et-Oak	29th-37th	n Avenues
Speed			45-	-45			40	-20
Segment				3				F
			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			4-6000	8.05			2-6000	0.73
			4-6000	8.05			2-1200	2.36
			2-1200	1.60				
			1-300	0.58				
Sub-Total				26.39				7.28
			67th,66th	,65th St.'s			5th A	venue

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
			(45))=48 seconds or 0.	R minutes	Time Will
30	6000	1.47	60	98.03	4 60
30	1200	1.47	60		1.63
30	600			43.61	0.73
30	•	1.47	60	36.80	0.61
	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	
30	1200	1.47	20		3.90
30	600	1.47	20	70.82	1.18
30	300	1.47		50.41	0.84
30	6000		20	40.20	0.67
30	i	1.47	15	302.11	5.04
	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

Note. The first number is	The limit speed for	nassenger traine_	the cocond	for frainks surius
	and many operation	passenger trains-	THE SECOID	ioi ireioni irains

Speed	60)-60					or freight trains.	
				-60		-15	60	-40
Segment		<u> </u>		3		E		F
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
No Build	10-600	6.13	10-600	6.13	15-600	i .	5-600	2.78
Westb'nd	4-6000	6.54	4-6000	6.54	2-6000	1	2-6000	4.40
	4-6000	6.54	4-6000	1	2-1200		2-1200	1.68
			2-1200	1.45	i		200	1.00
			1-300	0.56)			
Sub-Total	l j	20.66		22.67		34.22		9.59
	Cuttin	g Blvd.	Gilman-	Bancroft	Marke	et-Oak	B.	Avenues
Speed			45-	45				-20
Segment			Ε	3				=
			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			4-6000	8.05			2-6000	7.80
			4-6000	8.05			2-1200	
			2-1200	1.60			2-1200	2.36
			1-300	0.58				
Sub-Total	67t	h,66th,65th S	St.'s	26.39		5th Avenue		14.35
Totals	Cuttin	g Blvd.	Gilman-l	Bancroft		t-Oak	29th-37th	
East & We		41.32		45.34	*	68.44444	2301-07(11	18.46
From all Ti	rains		67th,66th,				5th A	
in Minutes				52.78			5th Av	1
				32.10		·		21.63

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	-(1200/(1.47*	45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	l .	15	57.21	0.95
30	l .	1.47	15	43.61	

GATE DOWN TIME AT SUBJECT CROSSINGS

				co passon		-15	60-	40
Speed	60	-60	60-					
Segment		Α	E			-	F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	i	1-1200	0.73
Alt "A"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Eastb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	5-6000	8.17	5-6000	8.17				
			1-1200	0.73				
!			1-300	0.56				
Sub-Total		28.83		30.11		34.22		9.59
	Cuttin	ng Blvd.	Gilman-	Bancroft	Marke	et-Oak	29th-37th	Avenues
Speed			45	-45			40	-20
Segment				3				F
			2-1200	1.60			1-1200	0.84
			10-600	6.51	Ĭ		5-600	3.35
			4-6000	8.05			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			5-6000	10.06				
			1-1200	0.80				
1			1-300	0.58				<u></u>
Sub-Total				35.65				14.35
			67th,66th	,65th St.'s			5th A	venue

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
		+(1200/(1.47 ⁴	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

. 101	0. 1110 111301	number is the	minit speed	noi passeni	yer trains- t	ne second i	or ireignt tra	ains.
Speed	60	-60	60	-60	15	-15	60-	-40
Segment		A	E	3			F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "A"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Westb'nd	4-6000	6.54	4-6000	6.54	2-6000	l	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	l	2-1200	1.68
	5-6000	8.17	5-6000	8.17		·		
			1-1200	0.73				
			1-300	0.56				
Sub-Total		28.83		30.11		34.22		9.59
	Cuttin	g Bivd.	Gilman-	Bancroft	Marke	et-Oak	1	Avenues
Speed			45	-45				-20
Segment				3				=
			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			4-6000	8.05			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			5-6000	10.06				
			1-1200	0.80				
·			1-300	0.58				
Sub-Total	67t	h,66th,65th S	St.'s	35.65		5th Avenue	<u> </u>	14.35
Totals	Cutting	57.65	Gil-Ban	60.22	Mark-Oak	68.44	29th-37th	19.18
E and W	67t	h,66th,65th S	St's.	71.29		5th Avenue		28.71

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	(1200/(1.47*	45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	1
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	

1100					ger trains-tr			
Speed	60	-60	60-	-60		-15		-40
Segment		A	Ε	3	E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "B"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Eastb'nd	3-6000	4.90	3-6000	4.90	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	3-6000	4.90	3-6000	4.90				. 1
			1-1200	0.73				1
i			1-300	0.56				
Sub-Total		23.93		25.21		34.22		9.59
000	Cuttin	g Blvd.	1	Bancroft	Marke	et-Oak	29th-37th	n Avenues
Speed			45	-45			40	-20
				7			i	F
Seament			ļ t	3	1			,
Segment			2-1200	1.60			1-1200	0.84
Segment								
Segment			2-1200	1.60			1-1200	0.84
Segment			2-1200 10-600	1.60 6.51			1-1200 5-600	0.84 3.35
Segment			2-1200 10-600 3-6000	1.60 6.51 6.04			1-1200 5-600 2-6000	0.84 3.35 7.80
Segment			2-1200 10-600 3-6000 4-6000	1.60 6.51 6.04 8.05			1-1200 5-600 2-6000	0.84 3.35 7.80
Segment			2-1200 10-600 3-6000 4-6000 3-6000	1.60 6.51 6.04 8.05 6.04			1-1200 5-600 2-6000	0.84 3.35 7.80
Segment Sub-Total			2-1200 10-600 3-6000 4-6000 3-6000 1-1200	1.60 6.51 6.04 8.05 6.04 0.80			1-1200 5-600 2-6000	0.84 3.35 7.80

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	+(1200/(1.47*	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

Speed		-60	60-		15.	-15	60-	
				3				
Segment		Α			E 7.04		F	
	2-1200		2-1200	l	5-1200		1-1200	0.73
Alt "B"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Westb'nd	3-6000	4.90	3-6000	4.90	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	3-6000	4.90	3-6000	4.90				
			1-1200	0.73				
•			1-300	0.56				
Sub-Total		23.93		25.21		34.22		9.59
	Cuttin	ig Blvd.	Gilman-Bancroft Market-Oak		29th-37th	Avenues		
Speed			45	-45			40-	-20
Segment				3			F	=
		· · · · ·	2-1200	1.60	1		1-1200	0.84
			10-600	6.51			5-600	3.35
			3-6000	6.04			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			3-6000	6.04				
			1-1200	0.80	İ			
1			1-300	0.58				
Sub-Total	671	h,66th,65th	St.'s	29.61		5th Avenue		14.35
Totals	Cutting	47.85	Gil-Banc	50.42	Mark-Oak	68.44444	29th-37th	19.18
E&W	67	th,66th,65th	St's.	59.22		5th Avenue	•	28.71

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	+(1200/(1.47 [*]	*45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

Speed	60	-60		60-60	15-	-15	60	-40
Segment		A		В	E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "C"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Eastb'nd	5-6000	8.17	5-6000	8.17	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
1	4-6000	6.54	4-6000	6.54				
			1-1200	0.73				
			1-300	0.56				
Sub-Total		28.83		30.11		34.22		9.59
	Cuttin	g Blvd.	Gilma	an-Bancroft	Marke	et-Oak	29th-37th	Avenues
Speed				45-45			40	-20
Segment				В			ı	
			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			5-6000	10.06			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			4-6000	8.05				
			1-1200	0.80				
			1-300	0.58				
Sub-Total				35.65				14.35
			67th,66	3th,65th St.'s			5th A	venue

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	(1200/(1.47*	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15_	43.61	0.73

Speed	60	-60	60-		15-	-15	60-40		
Segment		Α		3	E		F		
	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73	
Alt "C"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78	
Westb'nd	5-6000	8.17	5-6000	8.17	2-6000	10.07	2-6000	4.40	
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68	
	5-6000	8.17	5-6000	8.17					
			1-1200	0.73					
			1-300	0.56					
Sub-Total		30.46		31.74		34.22		9.59	
	Cuttin	g Blvd.	Gilman-	Bancroft	Market-Oak		29th-37th Avenues		
Speed			45	45			40	-20	
Segment				3				F	
			2-1200	1.60			1-1200	0.84	
			10-600	6.51			5-600	3.35	
			5-6000	10.06			2-6000	7.80	
			4-6000	8.05			2-1200	2.36	
			5-6000	10.06					
			1-1200	0.80					
			1-300	0.58					
Sub-Total	67t	h,66th,65th S	St.'s	37.66	5th Avenue		14.35		
Totals	Cutting	59.29	Gil-Banc	61.85	Mark-Oak	68.44444	29th-37th	19.18	
E&W	67th,66th	1,65th St's.		73.30		5th Avenue)	28.71	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30-	+(1200/(1.47*	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

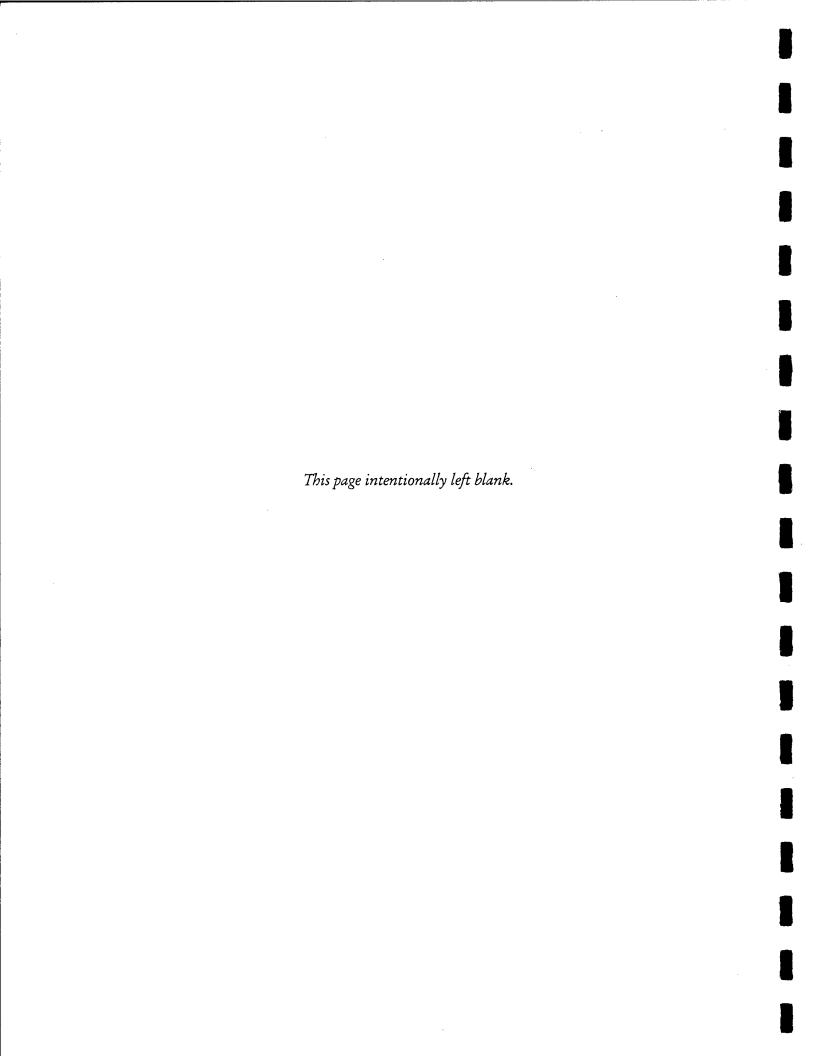
Speed	60	-60	60-	-60	15-	-15	60	-40
Segment		Α	E	3	E			=
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "D"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Eastb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	5-6000	8.17	5-6000	8.17				
			1-1200	0.73				
			1-300	0.56				
Sub-Total		28.83		30.11		34.22		9.59
	Cuttin	g Blvd.	Gilman-	Bancroft	Market-Oak		29th-37th	Avenues
Speed			45-	-45			40	-20
Segment				3				=
			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			4-6000	8.05			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			5-6000	10.06				
			1-1200	0.80				
			1-300	0.58				
Sub-Total				35.65				14.35
			67th,66th	,65th St.'s			5th A	venue

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30-	+(1200/(1.47 *	'45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

		number is the	mint speed	i loi passeri	ger trains- t	ne second i	or freight tra	ains.
Speed	60	-60	60	-60	15	-15	60	-40
Segment		A		3		E		Ė
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "D"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Westb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	6-6000	9.80	6-6000	9.80				
			1-1200	0.73	•			
•			1-300	0.56				
Sub-Total		30.46		31.74		34.22		9.59
	Cuttin	g Blvd.	Gilman-Bancroft Mar		Marke	rket-Oak 29th-37th		Avenues
Speed			² 45	-45				-20
Segment				3				F
			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			4-6000	8.05			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			6-6000	12.07				
1			1-1200	0.80				
			1-300	0.58				
Sub-Total	67t	h,66th,65th S	St.'s	37.66		5th Avenue		14.35
Totals	Cutting	59.29	Gil-Banc	61.85	Mark-Oak	68.44	29th-37th	19.18
E&W	67th,66th	n,65th St's.		73.30		5th Avenue)	28.71



Appendix J.4
Marine and Rail Traffic Background Data and Assumptions

Table J.4-1 FISCO/Port Vision 2000 EIS/EIR Marine / Rail Traffic Assumptions

Marine Container Distribution

Type of Trip	Project Alternative						
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill	
To / From Rail	20%	5%	31.1%	15.0%	33.8%	32.8%	
Over-the-road	80%	95%	68.9%	85.0%	66.2%	67.2%	

Marine / Rail Factors

Parameter	Assumptions		
	Marine	Rail	Comment
TEUs / Container	1.75		
1996/1995 Growth	107%		
TEUs / Acre / Year		ļ	
1995	3,168		
1996	3,390		
2010	4,700		
Weeks per year	52	52	
Days per week	5	7	
Peak Week / Average Week	1.25	1.19	
Peak Weekday/Avg. Day of Wee	1	1.33	Rail peak factor accounts for slow weekends.
Gate Moves / Lift	1.33	1.52	
Truck Trips / Gate Move - Total	Varies	1.6	
Over-the-Road	1.65		
Marine - Rail	1.9		

Table J.4-2 FISCO/Port Vision 2000 EIS/EIR Rail Background Data

Peak / Average Activity Factor Based on 2010 Train Arrival and Departures (1)

	<u>Total</u>
Peak	32
Average	27
Factor	1.19

Peak Day / Average Day Factor Calculation Based On Rail Terminal Gate Transactions (2)

Day	Railroad		<u>Total</u>
	SP	<u>UP</u>	
Mon	950	800	1,750
Tue	950	970	1,920
Wed	950	900	1,850
Thu	950	800	1,750
Fri	950	500	1,450
Sat	250	700	950
Sun	<u>200</u>	<u>250</u>	<u>450</u>
Total	5,200	4,920	10,120
Average	743	703	1,446
Maximum	<u>950</u>	<u>970</u>	<u>1,920</u>
Factor	1.28	1.38	1.33

⁽¹⁾ Provided by Nolte and Associates.

⁽²⁾ Joint Intermodal Terminal Operating Plan, Summit/Lynch consulting Engineers, et. al., Feb. 1995.

Table J.4-3 FISCO/Port Vision 2000 EIS/EIR Marine Traffic

Marine Terminal Acres

Zone / Terminal		Project Alternative								
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill				
1 New Harbor	0.0	0.0	260.0	100.0	290.0	278.0				
6 Middle Harbor	131.7	131.7	131.7	131.7	131.7	131.7				
7 7th St. Harbor	156.7	156.7	156.7	156.7	156.7	156.7				
8 Outer Harbor	180.4	180.4	180.4	202.4	180.4	180.4				
Total	468.7	468.7	728.7	590.7	758.7	746.7				

Annual Lifts (Containers)

Zone / Terminal		Project Alternative									
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill					
1 New Harbor	0	0	698,286	268,571	778,857	746,629					
6 Middle Harbor	255,109	353,709	353,709	353,709	353,709	353,709					
7 7th St. Harbor	303,458	420,744	420,744	420,744	420,744	420,744					
8 Outer Harbor	349,366	484,395	484,395	543,535	484,395	484,395					
Total (rounded)	907,934	1,258,848	1,957,134	1,586,559	2,037,705	2,005,477					

Weekday Truck Trips - Over-the-Road

Zone / Terminal		Project Alternative									
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill					
1 New Harbor	0	0	5,076	2,409	5,440	5,294					
6 Middle Harbor	2,153	3,545	2,571	3,172	2,470	2,508					
7 7th St. Harbor	2,561	4,217	3,059	3,773	2,939	2,983					
8 Outer Harbor	2,949	4,855	3,521	4,874	3,383	3,434					
Total	7,663	12,617	14,227	14,228	14,232	14,219					

Weekday Truck Trips - To and From Rail

Zone / Terminal		Project Alternative								
<u> </u>	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill				
1 New Harbor	0	0	2,638	489	3,198	2.975				
6 Middle Harbor	620	215	1,336	645	1,452	1,409				
7 7th St. Harbor	737	256	1,590	767	1.728	1.677				
8 Outer Harbor	849	294	1,830	991	1,989	1,930				
Total	2,206	765	7,395	2,891	8,368	7,992				

Weekday Truck Trips - Total

Zone / Terminal		Project Alternative									
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill					
1 New Harbor	0	0	7,714	2,898	8,638	8,269					
6 Middle Harbor	2,773	3,760	3,908	3,817	3,923	3,917					
7 7th St. Harbor	3,299	4,473	4,648	4,540	4,666	4,660					
8 Outer Harbor	3,798	5,149	5,351	5,865	5,372	5,365					
Total	9,869	13,382	21,622	17,119	22,600	22,210					

Table J.4-4 FISCO/Port Vision 2000 EIS/EIR Rail Traffic

Annual Lifts - Sustainable

Zone / Terminal		Project Alternative								
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill				
3 J.I.T.			1,242,000	450,000	600,000	1,156,000				
4 SP	158,000	250,000		400,000	609,000					
5 UP	102,000	135,000		135,000						
11 BN/SF	24,000	24,000								
Total	284,000	409,000	1,242,000	985,000	1,209,000	1,156,000				

Annual Lifts - Constrained

Zone / Terminal		Project Alternative								
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill				
3 J.I.T.			1,458,000	490,000	650,000	1,357,000				
4 SP		300,000		450,000	660,000					
5 UP	l	154,000		154,000						
11 BN/SF		24,000								
Total		478,000	1,458,000	1,094,000	1,310,000	1,357,000				

Annual Lifts - Gridlocked

Zone / Terminal		Project Alternative								
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill				
3 J.I.T.			1,782,000	645,000	860,000	1,658,000				
4 SP	∦	359,000		574,000	874,000					
5 UP		194,000		194,000						
11 BN/SF		24,000								
Total		577,000	1,782,000	1,413,000	1,734,000	1,658,000				

Table J.4-5 FISCO/Port Vision 2000 EIS/EIR Traffic at the Port of Oakland

Annual Lifts - Marine Terminals

	Marine Terminal Container Throughput						
Alternative	Total	To / Fror	n Rail	Other			
		Percent	Number	(over-the-road)			
Existing	907,934	20%	181,587	726,347			
No Project	1,258,848	5%	62,942	1,195,906			
Max. Marine/Max. Rail	1,957,134	31.1%	608,669	1,348,465			
Min. Marine/Min. Rail	1,586,559	15.0%	237,984	1,348,575			
Max. Marine/Min. Rail	2,037,705	33.8%	688,744	1,348,961			
Reduced Harbor Fill	2,005,477	32.8%	657,796	1,347,680			

Annual Lifts - Railyards

	Rail Intermodal Throughput								
Alternative	Capacity Operating		To / From Marine		Other (domestic & trailers)		Total	Surplus	
		Efficiency	Number	Percent	Number	Percent		Capacity (1)	
Existing	284,000	Existing	181,587	64%	102,413	36%	284,000	0:	
No Project	577,000	Gridlocked	62,942	11%	514,058	89%	577,000	0	
Max. Marine/Max. Rail	1,242,000	Sustainable	608,669	53%	531,000	47%	1,139,669	102,331	
Min. Marine/Min. Rail	773,000	Sustainable	237,984	31%	531,000	69%	768,984	4,016	
Max. Marine/Min. Rail	1,310,000	Constrained	688,744	56%	531,000	44%	1,219,744	90,256	
Reduced Harbor Fill	1,357,000	Constrained	657,796	55%	531,000	45%	1,188,796	168,204	

Weekday Truck Trips

		Marine	Terminals		Rail Intermodal Terminals							
Alternative	Total	To / Fror	n Rail	Other	Total	To / From	Marine	Other (domes	tic & trailers)			
				(over-the-road)		Number	Percent	Number (3)	Percent			
Existing	9,869	2,206	22.4%	7,663	2,987	2,206	74%	781	26%			
No Project	13,382	765	5.7%	12,617	5,209	765	15%	4,444	85%			
Max. Marine/Max. Rail	21,622	7,395	34.2%	14,227	11,985	7,395	62%	4,590	38%			
Min. Marine/Min. Rail	17,119	2,891	16.9%	14,228	7,482	2,891	39%	4,590	61%			
Max. Marine/Min, Rail	22,600	8,368	37.0%	14,232	12,958	8,368	65%	4,590	35%			
Reduced Harbor Fill	22,210	7,992 36.0%		14,219	12,582	7,992	64%	4,590	36%			

- (1) The surplus capacity for each alternative shows the number of additional lifts that could be accommodated at the indicated operating efficiency level.
- (2) The domestic and trailer demand at the railyards would be 531,000 (Summit Lynch 1995); therefore, 17,000 containers will be diverted.
- (3) Domestic and trailer truck trips at the railyards (for the project alternatives) are proportional to the number of annual lifts.

Table J.4-6 FISCO/Port Vision 2000 EIS/EIR Marine Traffic

Marine Terminal Acres

Zone / Terminal				Project Alternative		
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0.0	0.0	260.0	100.0	290.0	278.0
6 Middle Harbor	131.7	131.7	131.7	131.7	131.7	131.7
7 7th St. Harbor	156.7	156.7	156.7	156.7	156.7	156.7
8 Outer Harbor	180.4	180.4	180.4	202.4	180.4	180.4
Total	468.7	468.7	728.7	590.7	758.7	746.7

Employees

Employees / Acre	2.73	3.91	3.91	3.91	3.91	3.91
Zone / Terminal				Project Alternative		
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0	0	1,018	391	1,135	1,088.2
6 Middle Harbor	360	516	516	516	516	515.5
7 7th St. Harbor	428	613	613	613	613	613.2
8 Outer Harbor	492.6	· 706.0	706.0	792.2	706.0	706.0
Total	1,280.3	1,834.7	2,852.4	2,312.3	2,969.8	2,922.9

Α	AM Trips	348	566
U	AM Trips / Employee	0.27	0.31
Т	PM Trips	359	514
0	PM Trips / Employee	0.28	0.28

Appendix J.5
Peak Hour Marine Terminal Truck Traffic Generation

Table J.5-1

Marine Terminal Travel Characteristics

Existing Condtions

Auto	Trips

Auto IIIpa												
Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle I	Harbor T	erminal	7th S	treet Ter	minal	Outer H	larbor T	erminal	i	Total	
	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total
6:00	93	5	98	110	6	116	127	7	134	330	18	348
7:00	106	6	112	126	7	133	145	8	153	377	21	398
8:00	62	3	65	73	4	77	85	4	89	220	11	231
9:00	52	6	58	. 62	7	69	72	8	80	186	21	207
10:00	40	27	67	48	32	80	55	37	92	143	96	239
11:00	43	43	86	51	51	102	58	58	116	152	152	304
12:00	47	47	94	56	56	112	64	64	128	167	167	334
13:00	39	39	78	46	46	92	53	53	106	138	138	276
14:00	16	65	81	19	77	96	22	89	111	57	231	288
15:00	5	96	101	6	114	120	7	131	138	18	341	359
16:00	5	94	99	6	112	118	7	128	135	18	334	352
17:00	8	74	82	10	88	98	11	101	112	29	263	292

Truck Trip	18											
Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	larbor Te	erminal	1	Total	
	In	Out	Total	in	Out	Total	ln :	Out	Total	In	Out	Total
6:00	73	0	73	76	. 0	76	91	0	91	240	0	240
7:00	90	0	90	94	0	94	113	0	113	297	0	297
8:00	140	149	289	147	156	303	176	188	364	463	493	956
9:00	206	252	458	216	264	480	259	317	576	681	833	1,514
10:00	169	187	356	177	196	373	212	236	448	558	619	1,177
11:00	213	191	404	223	200	423	268	240	508	704	631	1,335
12:00	88	150	238	92	157	249	110	189	299	290	496	786
13:00	209	149	358	219	156	375	263	187	450	691	492	1,183
14:00	160	185	345	168	194	362	202	233	435	530	612	1,142
15:00	115	138	253	120	144	264	144	173	317	379	455	834
16:00	30	73	103	32	76	108	38	91	129	100	240	340
17:00	0	15	15	0	16	16	0	19	19		50	50

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 6		<u> </u>	Zone 7			Zone 8				
Beginning	Middle i	Harbor T	erminal	7th S	treet Ter	minal	Outer F	Harbor To	erminal		Total	
	ln	Out	Total	· In	Out	Total	In	Out	Total	In	Out	Total
6:00	146	0	146	152	0	152	182	0	182	480	0	480
7:00	180	0	180	188	0	188	226	0	226	594	0	594
8:00	280	298	578	294	312	606	352	376	728	926	986	1,912
9:00	412	504	916	432	528	960	518	634	1,152	1,362	1,666	3,028
10:00	338	374	712	354	392	746	424	472	896	1,116	1,238	2,354
11:00	426	382	808	446	400	846	536	480	1,016	1,408	1,262	2,670
12:00	176	300	476	184	314	498	220	378	598	580	992	1,572
13:00	418	298	716	438	312	750	526	374	900	1,382	984	2,366
14:00	320	370	690	336	388	724	404	466	870	1,060	1,224	2,284
15:00	230	276	506	240	288	528	288	346	634	758	910	1,668
16:00	60	146	206	64	152	216	76	182	258	200	480	680
17:00	0	30	30	0	32	32	0	38	38	0	100	100

	Total Fassenger Car Equivalents for fracks and Autos											
Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle I	Harbor T	erminal	7th S	treet Ter	minal	Outer h	larbor T	erminal	i	Total	l
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6:00	239	5	244	262	6	268	309	7	316	810	18	828
7:00	286	6	292	314	7	321	371	8	379	971	21	992
8:00	342	301	643	367	316	683	437	380	817	1,146	997	2,143
9:00	464	510	974	494	535	1,029	590	642	1,232	1,548	1,687	3,235
10:00	378	401	779	402	424	826	479	509	988	1,259	1,334	2,593
11:00	469	425	894	497	451	948	594	538	1,132	1,560	1,414	2,974
12:00	223	347	570	240	370	610	284	442	726	747	1,159	1,906
13:00	457	337	794	484	358	842	579	427	1,006	1,520	1,122	2,642
14:00	336	435	771	355	465	820	426	555	981	1,117	1,455	2,572
15:00	235	372	607	246	402	648	295	477	772	776	1,251	2,027
16:00	65	240	305	70	264	334	83	310	393	218	814	1,032
17:00	8	104	112	10	120	130	11	139	150	29	363	392

Table J.5-2 Marine Terminal Travel Characteristics No Project Alternative

Auto Trips

Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle I	Harbor T	erminal	7th S	treet Ter	minal	Outer i	larbor To	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	ln	Out	Total
7:00	151	8	159	180	9	189	207	11	218	538	28	566
8:00	88	5	93	105	6	111	121	6	127	314	17	331
9:00	75	8	83	89	10	99	103	11	114	267	29	296
10:00	57	38	95	68	46	114	79	52	131	204	136	340
11:00	61	61	122	73	73	146	84	84	168	218	218	436
12:00	67	67	134	80	80	160	92	92	184	239	239	478
13:00	56	56	112	66	66	132	76	76	152	198	198	396
14:00	23	93	116	28	110	138	32	127	159	83	330	413
15:00	7	137	144	9	163	172	10	188	198	26	488	514
16:00	7	134	141	8	160	168	10	184	194	25	478	503
17:00	12	106	118	14	126	140	16	145	161	42	377	419

Truck Trips

Truck Trip	3											
Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle	Harbor T	erminal	7th S	treet Ten	minal	Outer F	larbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	113	0	113	134	0	134	154	0	154	401	0	401
8:00	177	188	365	210	224	434	242	257	499	629	669	1,298
9:00	259	318	577	309	378	687	355	435	790	923	1,131	2,054
10:00	213	236	449	253	281	534	291	323	614	757	840	1,597
11:00	268	240	508	319	286	605	367	329	696	954	855	1,809
12:00	111	189	300	132	225	357	151	259	410	394	673	1,067
13:00	264	187	451	314	223	537	361	256	617	939	666	1,605
14:00	202	233	435	240	277	517	277	319	596	719	829	1,548
15:00	145	173	318	172	206	378	198	237	435	515	616	1,131
16:00	38	91	129	46	109	155	52	125	177	136	325	461
17:00	0	19	19	0	23	23	0	26	26	0	68	68

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

		EL CHITAGETTE TOT TTUCKS (T GUCK - E pussenger curs)										
Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle I	Harbor T	erminal	7th S	treet Ter	minal	Outer F	Harbor To	erminal	ļ	Total	j
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	226	0	226	268	0	268	308	0	308	802	0	802
8:00	354	376	730	420	448	868	484	514	998	1,258	1,338	2,596
9:00	518	636	1,154	618	756	1,374	710	870	1,580	1,846	2,262	4,108
10:00	426	472	898	506	562	1,068	582	646	1,228	1,514	1,680	3,194
11:00	536	480	1,016	638	572	1,210	734	658	1,392	1,908	1,710	3,618
12:00	222	378	600	264	450	714	302	518	820	788	1,346	2,134
13:00	528	374	902	628	446	1,074	722	512	1,234	1,878	1,332	3,210
14:00	404	466	870	480	554	1,034	554	638	1,192	1,438	1,658	3,096
15:00	290	346	636	344	412	756	396	474	870	1,030	1,232	2,262
16:00	76	182	258	92	218	310	104	250	354	272	650	922
17:00	0	38	38	0	46	46	0	52	52	0	136	136

TOTAL Pass	enger co	ai Equiv	aienius n	JI IIUCK	3 allu At	103						
Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle I	Harbor T	erminal	7th S	treet Ter	minal	Outer F	Harbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	377	8	385	448	9	457	515	11	526	1,340	28	1,368
8:00	442	381	823	525	454	979	605	520	1,125	1,572	1,355	2,927
9:00	593	644	1,237	707	766	1,473	813	881	1,694	2,113	2,291	4,404
10:00	483	510	993	574	608	1,182	661	698	1,359	1,718	1,816	3,534
11:00	597	541	1,138	711	645	1,356	818	742	1,560	2,126	1,928	4,054
12:00	289	445	734	344	530	874	394	610	1,004	1,027	1,585	2,612
13:00	584	430	1,014	694	512	1,206	798	588	1,386	2,076	1,530	3,606
14:00	427	559	986	508	664	1,172	586	765	1,351	1,521	1,988	3,509
15:00	297	483	780	353	575	928	406	662	1,068	1,056	1,720	2,776
16:00	83	316	399	100	378	478	114	434	548	297	1,128	1,425
17:00	12	144	156	14	172	186	16	197	213	42	513	555

Table J.5-3 Marine Terminal Travel Characteristics Maximum Marine/Maximum Rail Alternative

Αı	ıτn	Tri	ns

Hour		Zone 1			Zone 6			Zone 7	···		Zone 8				
Beginning	New H	larbor Te	rminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer I	Harbor To	erminal		Total	
	ln	Out	Total	ln	Out	Total	ln	Out	Total	ln	Out	Total	In	Out	Total
7:00	299	16	315	151	8	159	180	9	189	207	11	218	837	44	881
8:00	175	9	184	88	5	93	105	6	111	121	6	127	489	26	515
9:00	148	16	164	75	8	83	89	10	99	103	11	114	415	45	460
10:00	113	76	189	57	38	95	68	46	114	79	52	131	317	212	529
11:00	121	121	242	61	61	122	73	73	146	84	84	168	339	339	678
12:00	133	133	266	67	67	134	80	80	160	92	92	184	372	372	744
13:00	110	110	220	56	56	112	66	66	132	76	76	152	308	308	616
14:00	46	183	229	23	93	116	28	110	138	32	127	159	129	513	642
15:00	14	271	285	7	137	144	9	163	172	10	188	198	40	759	799
16:00	14	265	279	7	134	141	8	160	168	10	184	194	39	743	782
17:00	23	208	231	12	106	118	14	126	140	16	145	161	65	585	650

Hour		Zone 1			Zone 6			Zone 7	'		Zone 8				
Beginning	Outer I	Harbor Te	erminal	Middle	Middle Harbor Terminal			treet Ter	minal	Outer I	Harbor Te	erminal		Total	
	ln	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	ln i	Out	Total
7:00	231	0	231	117	0	117	139	0	139	160	0	160	647	0	647
8:00	362	386	748	183	195	378	218	232	450	251	268	519	1,014	1,081	2,095
9:00	532	652	1,184	270	330	600	321	393	714	369	452	821	1,492	1,827	3,319
10:00	436	484	920	221	245	466	263	292	555	303	336	639	1,223	1,357	2,580
11:00	550	493	1,043	279	250	529	331	297	628	381	342	723	1,541	1,382	2,923
12:00	227	388	615	115	197	312	137	234	371	157	269	426	636	1,088	1,724
13:00	541	384	925	274	195	469	326	231	557	375	266	641	1,516	1,076	2,592
14:00	415	478	893	210	242	452	250	288	538	288	331	619	1,163	1,339	2,502
15:00	297	356	653	150	180	330	179	214	393	206	247	453	832	997	1,829
16:00	79	188	267	40	95	135	47	113	160	54	130	184	220	526	746
17:00	0	39	39	0	20	20	0	24	24	0	27	27	0	110	110

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer F	larbor Te	erminal	Middle I	Middle Harbor Terminal			treet Ter	minal	Outer I	larbor Te	erminal		Total	
	in	Out	Total	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total
7:00	462	0	462	234	0	234	278	0	278	320	0	320	1,294	0	1,294
8:00	724	772	1,496	366	390	756	436	464	900	502	536	1,038	2,028	2,162	4,190
9:00	1,064	1,304	2,368	540	660	1,200	642	786	1,428	738	904	1,642	2,984	3,654	6,638
10:00	872	968	1,840	442	490	932	526	584	1,110	606	672	1,278	2,446	2,714	5,160
11:00	1,100	986	2,086	558	500	1,058	662	594	1,256	762	684	1,446	3,082	2,764	5,846
12:00	454	776	1,230	230	394	624	274	468	742	314	538	852	1,272	2,176	3,448
13:00	1,082	768	1,850	548	390	938	652	462	1,114	750	532	1,282	3,032	2,152	5,184
14:00	830	956	1,786	420	484	904	500	576	1,076	576	662	1,238	2,326	2,678	5,004
15:00	594	712	1,306	300	360	660	358	428	786	412	494	906	1,664	1,994	3,658
16:00	158	376	534	80	190	270	94	226	320	108	260	368	440	1,052	1,492
17:00	0	78	78	0	40	40		48	48	0	54	54	0	220	220

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer I-	larbor Te	erminal	Middle I	Harbor T	erminal	7th S	treet Ter	minal	Outer I	Harbor Te	erminal		Total	
	In	Out	Total	ln	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total
7:00	761	16	777	385	8	393	458	9	467	527	11	538	2,131	44	2,175
8:00	899	781	1,680	454	395	849	541	470	1,011	623	542	1,165	2,517	2,188	4,705
9:00	1,212	1,320	2,532	615	668	1,283	731	796	1,527	841	915	1,756	3,399	3,699	7,098
10:00	985	1,044	2,029	499	528	1,027	594	630	1,224	685	724	1,409	2,763	2,926	5,689
11:00	1,221	1,107	2,328	619	561	1,180	735	667	1,402	846	768	1,614	3,421	3,103	6,524
12:00	587	909	1,496	297	461	758	354	548	902	406	630	1,036	1,644	2,548	4,192
13:00	1,192	878	2,070	604	446	1,050	718	528	1,246	826	608	1,434	3,340	2,460	5,800
14:00	876	1,139	2,015	443	577	1,020	528	686	1,214	608	789	1,397	2,455	3,191	5,646
15:00	608	983	1,591	307	497	804	367	591	958	422	682	1,104	1,704	2,753	4,457
16:00	172	641	813	87	324	411	102	386	488	118	444	562	479	1,795	2,274
17:00	23	286	309	12	146	158	14	174	188	16	199	215	65	805	870

Table J.5-4 **Marine Terminal Travel Characteristics** Minimum Marine/Minimum Rail Alternative

Auto	Trips

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	New H	larbor Te	rminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	larbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	115	6	121	152	8	160	180	9	189	232	12	244	679	35	714
8:00	67	4	71	89	5	94	105	6	111	136	7	143	397	22	419
9:00	57	6	63	75	8	83	89	10	99	116	13	129		37	374
10:00	44	29	73	58	38	96	68	46	114	88	59	147	258	172	430
11:00	46	46	92	61	61	122	73	73	146	94	94	188	274	274	548
12:00	51	51	102	67	67	134	80	80	160	103	103	206	301	301	602
13:00	42	42	84	56	56	112	66	66	132	86	86	172	250	250	500
14:00	18	70	88	23	93	116	28	110	138	36	143	179		416	521
15:00	5	104	109	7	138	145	9	163	172	11	211	222	32	616	648
16:00	5	102	107	7	135	142	8	160	168	11	206	217	31	603	634
17:00	9	80	89	12	106	118	14	126	140	18	162	180	53	474	527

Truck Trips	,														
Hour		Zone 1			Zone 6			Zone 7			Zone 8				i
Beginning	Outer F	larbor Te	erminal	Middle ł	Middle Harbor Terminal			treet Ter	minal	Outer F	farbor Te	erminal		Total	
	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	87	0	87	114	0	114	136	0	136	176	0	176	513	0	513
8:00	136	145	281	179	191	370	213	227	440	275	293	568	803	856	1,659
9:00	200	245	445	263	323	586	313	384	697	405	496	901	1,181	1,448	2,629
10:00	164	182	346	216	240	456	257	285	542	332	368	700	969	1,075	2,044
11:00	207	185	392	272	244	516	324	290	614	418	375	793	1,221	1,094	2,315
12:00	85	146	231	112	192	304	134	229	363	173	295	468	504	862	1,366
13:00	203	144	347	268	190	458	318	226	544	411	292	703	1,200	852	2,052
14:00	156	179	335	205	236	441	244	281	525	315	363	678		1,059	1,979
15:00	111	134	245	147	176	323	175	209	384	226	270	496		789	1,448
16:00	30	70	100	39	93	132	46	110	156	60	143	203		416	591
17:00	0	15	15	0	19	19	0	23	23	0	30	30	0	87	87

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer F	Harbor Te	erminal	Middle I	Harbor T	erminal	7th S	treet Ter	minal	Outer F	larbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	174	0	174	228	0	228	272	0	272	352	0	352	1,026	0	1,026
8:00	272	290	562	358	382	740	426	454	880	550	586	1,136	1,606	1,712	3,318
9:00	400	490	890	526	646	1,172	626	768	1,394	810	992	1,802	2,362	2,896	5,258
10:00	328	364	692	432	480	912	514	570	1,084	664	736	1,400	1,938	2,150	4,088
11:00	414	370	784	544	488	1,032	648	580	1,228	836	750	1,586	2,442	2,188	4,630
12:00	170	292	462	224	384	608	268	458	726	346	590	936	1,008	1,724	2,732
13:00	406	288	694	536	380	916	636	452	1,088	822	584	1,406	2,400	1,704	4,104
14:00	312	358	670	410	472	882	488	562	1,050	630	726	1,356	1,840	2,118	3,958
15:00	222	268	490	294	352	646	350	418	768	452	540	992	1,318	1,578	2,896
16:00	60	140	200	78	186	264	92	220	312	120	286	406	350	832	1,182
17:00	0	30	30	0	38	38	. 0	46	46	0	60	60	0	174	174

Total Pass	enger Ca	ar Equiv	alents re	or trucks	s and At	itus									
Hour		Zone 1			Zone 6			Zone 7			Zone 8				l
Beginning	Outer F	larbor Te	erminal	Middle I	Harbor T	erminal	7th St	reet Ter	minal	Outer F	larbor Te	erminal		Total	
	ln l	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	289	6	295	380	8	388	452	9	461	584	12	596	1,705	35	1,740
8:00	339	294	633	447	387	834	531	460	991	686	593	1,279	2,003	1,734	3,737
9:00	457	496	953	601	654	1,255	715	778	1,493	926	1,005	1,931	2,699	2,933	5,632
10:00	372	393	765	490	518	1,008	582	616	1,198	752	795	1,547	2,196	2,322	4,518
11:00	460	416	876	605	549	1,154	721	653	1,374	930	844	1,774	2,716	2,462	5,178
12:00	221	343	564	291	451	742	348	538	886	449	693	1,142	1,309	2,025	3,334
13:00	448	330	778	592	436	1,028	702	518	1,220	908	670	1,578	2,650	1,954	4,604
14:00	330	428	758	433	565	998	516	672	1,188	666	869	1,535	1,945	2,534	4,479
15:00	227	372	599	301	490	791	359	581	940	463	751	1,214	1,350	2,194	3,544
16:00	65	242	307	85	321	406	100	380	480	131	492	623	381	1,435	1,816
17:00	9	110	119	12	144	156	14	172	186	18	222	240	53	648	701

Table J.5-5 Marine Terminal Travel Characteristics Maximum Marine/Minimum Rail Alternative

Auto	Trips

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	New H	arbor Te	rminal	Middle	Harbor T	erminal	7th S	treet Ter	rminal	Outer I	Harbor Te	erminal	1	Total	
	In	Out	Total	In	Out	Total	_ in	Out	Total	ln	Out	Totai	In	Out	Total
7:00	333	18	351	151	8	159	180	9	189	207	11	218	871	46	917
8:00	195	10	205	88	5	93	105	6	111	121	6	127	509	27	536
9:00	166	18	184	75	8	83	89	10	99	103	11	114	433	47	480
10:00	127	84	211	57	38	95	68	46	114	79	52	131	331	220	551
11:00	134	134	268	61	61	122	73	73	146	84	84	168	352	352	704
12:00	148	148	296	67	67	134	80	80	160	92	92	184	387	387	774
13:00	123	123	246	56	56	112	66	66	132	76	76	152	321	321	642
14:00	51	204	255	23	93	116	28	110	138	32	127	159	134	534	668
15:00	16	303	319	7	137	144	9	163	172	10	188	198	42	791	833
16:00	16	296	312	7	134	141	8	160	168	10	184	194	41	774	815
17:00	26	232	258	12	106	118	14	126	140	16	145	161	68	609	677

Huck Hip															
Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer I	Harbor To	erminal	Middle	Harbor T	erminal	7th St	reet Ter	minal	Outer F	larbor Te	erminal		Total	
[i	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	ln	Out	Total
7:00	259	0	259	118	0	118	140	0	140	161	0	161	678	0	678
8:00	406	432	838	184	196	380	219	233	452	252	269	521	1,061	1,130	2,191
9:00	596	730	1,326	271	332	603	322	394	716	371	454	825	1,560	1,910	3,470
10:00	489	542	1,031	222	246	468	264	293	557	304	337	641	1,279	1,418	2,697
11:00	616	552	1,168	280	251	531	333	298	631	383	343	726	1,612	1,444	3,056
12:00	254	435	689	115	197	312	137	235	372	158	270	428	664	1,137	1,801
13:00	606	430	1,036	275	195	470	327	232	559	377	267	644	1,585	1,124	2,709
14:00	464	535	999	211	243	454	251	289	540	289	333	622	1,215	1,400	2,615
15:00	332	398	730	151	181	332	179	215	394	207	248	455	869	1,042	1,911
16:00	88	210	298	40	95	135	48	113	161	55	131	186	231	549	780
17:00	0	44	44	0	20	20	0	24	24	0	27	27	0	115	115

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer F	larbor Te	erminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	Harbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	518	0	518	236	0	236	280	0	280	322	0	322	1,356	0	1,356
8:00	812	864	1,676	368	392	760	438	466	904	504	538	1,042	2,122	2,260	4,382
9:00	1,192	1,460	2,652	542	664	1,206	644	788	1,432	742	908	1,650	3,120	3,820	6,940
10:00	978	1,084	2,062	444	492	936	528	586	1,114	608	674	1,282	2,558	2,836	5,394
11:00	1,232	1,104	2,336	560	502	1,062	666	596	1,262	766	686	1,452	3,224	2,888	6,112
12:00	508	870	1,378	230	394	624	274	470	744	316	540	856	1,328	2,274	3,602
13:00	1,212	860	2,072	550	390	940	654	464	1,118	754	534	1,288	3,170	2,248	5,418
14:00	928	1,070	1,998	422	486	908	502	578	1,080	578	666	1,244	2,430	2,800	5,230
15:00	664	796	1,460	302	362	664	358	430	788	414	496	910	1,738	2,084	3,822
16:00	176	420	596	80	190	270	96	226	322	110	262	372	462	1,098	1,560
17:00	0	88	88	0	40	40	0	48	48	0	54	54	0	230	230

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer I	larbor Te	erminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer H	larbor Te	erminal		Total	
	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	851	18	869	387	8	395	460	9	469	529	11	540	2,227	46	. 2,273
8:00	1,007	874	1,881	456	397	853	543	472	1,015	625	544	1,169	2,631	2,287	4,918
9:00	1,358	1,478	2,836	617	672	1,289	733	798	1,531	845	919	1,764	3,553	3,867	7,420
10:00	1,105	1,168	2,273	501	530	1,031	596	632	1,228	687	726	1,413	2,889	3,056	5,945
11:00	1,366	1,238	2,604	621	563	1,184	739	669	1,408	850	770	1,620	3,576	3,240	6,816
12:00	656	1,018	1,674	297	461	758	354	550	904	408	632	1,040	1,715	2,661	4,376
13:00	1,335	983	2,318	606	446	1,052	720	530	1,250	830	610	1,440	3,491	2,569	6,060
14:00	979	1,274	2,253	445	579	1,024	530	688	1,218	610	793	1,403	2,564	3,334	5,898
15:00	680	1,099	1,779	309	499	808	367	593	960	424	684	1,108	1,780	2,875	4,655
16:00	192	716	908	87	324	411	104	386	490	120	446	566	503	1,872	2,375
17:00	26	320	346	12	146	158	14	174	188	16	199	215	68	839	907

Table J.5-6 Marine Terminal Travel Characteristics Reduced Harbor Fill Alternative

Auto Trips

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	New H	larbor Te	rminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	larbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	ln _	Out	Total
7:00	319	17	336	151	8	159	180	9	189	207	11	218	857	45	902
8:00	187	10	197	88	5	93	105	6	111	121	6	127	501	27	528
9:00	159	18	177	75	8	83	89	10	99	103	11	114	I I	47	473
10:00	121	81	202	57	38	95	68	46	114	79	52	131	325	217	542
11:00	129	129	258	61	61	122	73	73	146	84	84	168	347	347	694
12:00	142	142	284	67	67	134	80	80	160	92	92	184	381	381	762
13:00	118	118	236	56	56	112	66	66	132	76	76	152	316	1	632
14:00	49	196	245	23	93	116	28	110	138	32	127	159	132	526	658
15:00	15	290	305	7	137	144	9	163	172	10	188	198	41	778	819
16:00	15	284	299	7	134	141	8	160	168	10	184	194	40	762	802
17:00	25	223	248	12	106	118	14	126	140	16	145	161	67	600	667

Truck Trips

Truck Trips	<u> </u>														
Hour		Zone 1			Zone 6			Zone 7		ŧ	Zone 8				ŀ
Beginning	Outer H	larbor Te	erminal	Middle I	Harbor T	erminal	7th St	treet Ter	minal	Outer I	łarbor Te	erminal		Total	
	In	Out	Total	İn	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	248	0	248	117	0	117	140	0	140	161	0	161	666	0	666
8:00	388	413	801	184	196	380	219	233	452	252	268	520	1,043	1,110	2,153
9:00	571	699	1,270	270	331	601	322	394	716	370	453	823	1,533	1,877	3,410
10:00	468	519	987	222	246	468	264	293	557	303	337	640	1,257	1,395	2,652
11:00	589	528	1,117	279	250	529	332	298	630	382	343	725	1,582	1,419	3,001
12:00	243	416	659	115	197	312	137	235	372	158	270	428	653	1,118	1,771
13:00	580	412	992	275	195	470	327	232	559	376	267	643	1,558	1,106	2,664
14:00	444	512	956	210	243	453	250	289	539	288	332	620	1,192	1,376	2,568
15:00	318	381	699	151	181	332	179	215	394	206	247	453	854	1,024	1,878
16:00	84	201	285	40	95	135	47	113	160	55	130	185	226	539	765
17:00	o	42	42	0	20	20	0	24	24	0	27	27	0	113	113

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer H	tarbor Te	erminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	larbor Te	erminal		Total	
	In	Out	Total	!n	Out	Total	In	Out	Total	- In	Out	Total	ln	Out	Total
7:00	496	0	496	234	0	234	280	0	280	322	0	322	1,332	0	1,332
8:00	776	826	1,602	368	392	760	438	466	904	504	536	1,040	2,086	2,220	4,306
9:00	1,142	1,398	2,540	540	662	1,202	644	788	1,432	740	906	1,646	3,066	3,754	6,820
10:00	936	1,038	1,974	444	492	936	528	586	1,114	606	674	1,280	2,514	2,790	5,304
11:00	1,178	1,056	2,234	558	500	1,058	664	596	1,260	764	686	1,450	3,164	2,838	6,002
12:00	486	832	1,318	230	394	624	274	470	744	316	540	856	1,306	2,236	3,542
13:00	1,160	824	1,984	550	390	940	654	464	1,118	752	534	1,286	3,116	2,212	5,328
14:00	888	1,024	1,912	420	486	906	500	578	1,078	576	664	1,240	2,384	2,752	5,136
15:00	636	762	1,398	302	362	664	358	430	788	412	494	906	1,708	2,048	3,756
16:00	168	402	570	80	190	270	94	226	320	110	260	370	452	1,078	1,530
17:00	0	84	84	0	40	40	0	48	48	0	54	54	0	226	226

TOTAL PASS	vg.v. v.														
Hour		Zone 1			Zone 6			Zone 7	.		Zone 8				
Beginning	Outer F	Harbor Te	erminal	Middle I	Harbor To	erminal	7th S	treet Ter	minal	Outer i	larbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total
7:00	815	17	832	385	8	393	460	9	469	529	11	540	2,189	45	2,234
8:00	963	836	1,799	456	397	853	543	472	1,015	625	542	1,167	2,587	2,247	4,834
9:00	1,301	1,416	2,717	615	670	1,285	733	798	1,531	843	917	1,760	3,492	3,801	7,293
10:00	1.057	1,119	2,176	501	530	1,031	596	632	1,228	685	726	1,411	2,839	3,007	5,846
11:00	1,307	1,185	2,492	619	561	1,180	737	669	1,406	848	770	1,618	3,511	3,185	6,696
12:00	628	974	1,602	297	461	758	354	550	904	408	632	1,040	1,687	2,617	4,304
13:00	1,278	942	2,220	606	446	1,052	720	530	1,250	828	610	1,438	3,432	2,528	5,960
14:00	937	1,220	2,157	443	579	1,022	528	688	1,216	608	791	1,399	2,516	3,278	5,794
15:00	651	1,052	1,703	309	499	808	367	593	960	422	682	1,104	1,749	2,826	4,575
16:00	183	686	869	87	324	411	102	386	488	120	444	564	492	1,840	2,332
17:00	25	307	332	12	146	158	14	174	188	16	199	215	67	826	893

Table J.5-7 Marine Terminal Travel Characteristics

Auto Traffic

		Zone 1			Zone 6			Zone 7	<u> </u>		Zone 8				
	New H	arbor Te	rminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	Harbor To	erminal		Total	
	In	Out	Total	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total
Eviation Conditions															
Existing Conditions						——	r								
AM Peak Traffic Volume		1	-	62	3	65	73	4	77	85		89	220	4.4	004
Splits (In - Out)				95%	5%	05	95%	5%	''	96%	4 4%		95%	11 5%	231
Percent of Marine Traffic		ĺ		9570	J /0	28%	9570	3 76	33%	9076	4 70	39%	95 %	376	100%
PM Peak	\vdash					2070			3370			3970			100%
Traffic Volume		- [5	96	101	6	114	120	7	131	138	18	341	359
Splits (In - Out)		l		5%	95%	101	5%	95%	120	5%	95%	130	5%	95%	333
Percent of Marine Traffic] 3,0	3370	28%	370	3370	33%	3,0	3370	38%	378	3370	100%
						2070			0070			0070	I		10070
No Project Alternative	,											,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
AM Peak															
Traffic Volume	İ			88	5	93	i	6	111	121	6	127	314	17	331
Splits (In - Out)		l		95%	5%		95%	5%		95%	5%		95%	5%	
Percent of Marine Traffic						28%			34%			38%			100%
PM Peak															
Traffic Volume		- 1		. 7	137	144	9	163	172	10	188	198	26	488	514
Splits (In - Out)		ŀ		5%	95%		5%	95%		5%	95%		5%	95%	
Percent of Marine Traffic	Li					28%			33%			39%	L		100%
Maximum Marine/Maximu	m Rail	Altern	ative												
AM Peak															
Traffic Volume	175	9	184	88	5	93	105	6	111	121	6	127	489	26	515
Splits (In - Out)	95%	5%		95%	5%		95%	5%		95%	5%	i	95%	5%	
Percent of Marine Traffic			36%			18%			22%			25%			100%
PM Peak															
Traffic Volume	14	271	285	7	137	144	9	163	172	10	188	198	40	759	799
Splits (In - Out)	5%	95%		5%	95%		5%	95%	1	5%	95%		5%	95%	
Percent of Marine Traffic			36%			18%			22%			25%			100%
Minimum Marine/Minimur	n Rail	Alterna	tive												
AM Peak		T													
Traffic Volume	67	4	71	89	5	94	105	6	111	136	7	143	397	22	419
Splits (In - Out)	94%	6%	1	95%	5%		95%	5%		95%	5%		95%	5%	
Percent of Marine Traffic			17%			22%			26%			34%			100%
PM Peak															
Traffic Volume	5	104	109	7	138	145	9	163	172	11	211	222	32	616	648
Splits (In - Out)	5%	95%		5%	95%		5%	95%		5%	95%		5%	95%	
Percent of Marine Traffic	Li	l	17%	L		22%			27%			34%			100%
Maximum Marine/Minimu	m Rail	Alterna	ative												
AM Peak				[<u> </u>			T T			
Traffic Volume	195	10	205	88	5	93	105	6	111	121	6	127	509	27	536
Splits (In - Out)	95%	5%		95%	5%		95%	5%		95%	5%	1 1	95%	5%	
Percent of Marine Traffic			38%			17%		- ,-	21%			24%			100%
PM Peak		1													
Traffic Volume	16	303	319	7	137	144	9	163	172	10	188	198	42	791	833
Splits (In - Out)	5%	95%		5%	95%		5%	95%		5%	95%	1	5%	95%	
Percent of Marine Traffic			38%			17%			21%			24%			100%
Paduand Harbar Eili Alter															
Reduced Harbor Fill Alter	native						ſ		<u> </u>			F I	r		
Traffic Volume	187	10	197	88	5	93	105	6	111	121	6	127	501	27	528
Splits (In - Out)	95%	5%	19/	95%	5%	33	95%	5%		95%	5%		95%	5%	ı
Percent of Marine Traffic	33/6	3/0	37%	35/8	5/0	18%	33/8	3 /8	21%	35/8	5 /6	24%	3578	3 /6	100%
PM Peak			31 /0	 		1070	 		£1/0			24/0	ļ		100%
Traffic Volume	15	290	305	7	137	144	9	163	172	10	188	198	41	778	819
Splits (In - Out)	5%	95%	505	5%	95%	1-7-4	5%	95%		5%	95%		5%	95%	"
Percent of Marine Traffic		50,0	37%		3070	18%		33,0	21%	I	3070	24%		3070	100%
, croom or warme manie	i		V1 /0	L	L	10 /0	L	L	- 1 /0	Ь	L	1 47/0	I		1.007

Table J.5-8
Marine Terminal Travel Characteristics

Truck Traffic (In passenger car equivalents: 1 truck = 2 cars)

	<u></u>	Zone 1		<u> </u>	Zone 6	· · · · · · · · · · · · · · · · · · ·	[Zone 7			Zone 8				
	New H	larbor Te	erminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	Harbor T	erminal		Total	
	in	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Existing Conditions				,											
AM Peak															
Traffic Volume				280	298	578	294	312	606	352	376	728	926	986	1,91
Splits (In - Out)				48%	52%		49%	51%		48%	52%		48%	52%	
Percent of Marine Traffic						30%			32%			38%			1009
PM Peak		ĺ							500		0.40		750		4.00
Traffic Volume]			230	276	506	240	288	528	288	346	634	758	910	1,66
Splits (In - Out)				45%	55%	2004	45%	55%	200/	45%	55%	200/	45%	55%	1000
Percent of Marine Traffic	L	L				30%		i	32%			38%			1009
No Project Alternative															
AM Peak	<u> </u>														
Traffic Volume				354	376	730	420	448	868	484	514	998	1,258	1,338	2,59
Splits (In - Out)				48%	52%		48%	52%		48%	52%		48%	52%	
Percent of Marine Traffic		1				28%			33%			38%			1009
PM Peak															
Traffic Volume				290	346	636	344	412	756	396	474	870	1,030	1,232	2,26
Splits (In - Out)				46%	54%		46%	54%		46%	54%		46%	54%	
Percent of Marine Traffic						28%			33%			38%			100%
Maximum Marine/Maximu	ım Pail	Altorn	ativo												
AM Peak	liii Kaii	Aiteil	auve			1	l .								
Traffic Volume	724	772	1,496	366	390	756	436	464	900	502	536	1,038	2,028	2,162	4,19
Splits (In - Out)	48%	52%	, ,,,,,,,	48%	52%	,	48%	52%		48%	52%	''	48%	52%	·
Percent of Marine Traffic	,,,,	02/0	36%			18%			21%			25%			1009
PM Peak	ļ														
Traffic Volume	594	712	1,306	300	360	660	358	428	786	412	494	906	1,664	1,994	3,65
Splits (In - Out)	45%	55%	·	45%	55%		46%	54%		45%	55%		45%	55%	
Percent of Marine Traffic			36%			18%			21%			25%			100%
B	D.:!	A 14	41												
Minimum Marine/Minimu	n Kan	Aiterna	live				I								
AM Peak	270	200	562	358	202	740	426	454	880	550	586	1,136	1,606	1,712	3,31
Traffic Volume	272 48%	290 52%	562	48%	382 52%	740	48%	52%		48%	52%	1,130	48%	52%	3,31
Splits (In - Out)	48%	52%	17%	40%	52%	22%	40%	5270	27%	40 /0	52 /6	34%	40 /0	32 /8	1009
Percent of Marine Traffic PM Peak			17 70	<u> </u>		22 /0			21 /0			3470			
Traffic Volume	222	268	490	294	352	646	350	418	768	452	540	992	1,318	1,578	2,89
Splits (In - Out)	45%	55%	430	46%	54%	545	46%	54%	, , ,	46%	54%	552	46%	54%	_,
Percent of Marine Traffic	45%	3370	17%	10,0	3470	22%	10,0	0.170	27%	10,0		34%	(0)	5 1,75	1009
r creerx or Marine Trans	ł	l	11 70	!			·			·		1		l	
Maximum Marine/Minimu	m Rail	Altern	ative									·····			
AM Peak]			
Traffic Volume	812	864	1,676	368	392	760	438	466	904	504	538	1,042	2,122	2,260	4,38
Splits (In - Out)	48%	52%		48%	52%		48%	52%		48%	52%	(i	48%	52%	
Percent of Marine Traffic			38%			17%			21%			24%			100
PM Peak															
Traffic Volume	664	796	1,460		362	664	358	430	788	414	496				3,82
Splits (In - Out)	45%	55%		45%	55%		45%	55%		45%	55%	J 1	45%	55%	
Percent of Marine Traffic			38%	<u> </u>		17%			21%	L		24%			100
Reduced Harbor Fill Alter	rnative														
AM Peak															
	776	826	1,602	368	392	760	438	466	904	504	536	1,040	2,086	2,220	4,30
				48%	52%	1 1	48%	52%		48%	ı	, ,	48%	52%	
Traffic Volume	48%	52%		40/0											
	11	52%	37%	i	0270	18%			21%			24%			100
Traffic Volume Splits (In - Out)	11	52%	37%	i	0270	18%			21%			24%			100
Traffic Volume Splits (In - Out) Percent of Marine Traffic	11	52% 762			362		358	430	21% 788	412	494		1,708	2,048	3,75
Traffic Volume Splits (In - Out) Percent of Marine Traffic PM Peak	48%					664	358 45%	430 55%		412 45%	l .	906	1,708 45%	1 1	

Appendix J.6 Peak Hour Project Trip Generation

Table J.6-1 FISCO/Port Vision 2000 EIS/EIR AM Peak Hour Truck Trip Generation

(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1				
2				
3				
4	74%	238	84	322
5	74%	153	54	208
6	22%	129	449	578
7	22%	135	471	606
8	22%	163	565	728
9				
10				
11		36		

No Project Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1				
2				
3				
4	15%	92	536	629
5	15%	50	290	340
6	6%	42	688	730
7	6%	50	818	868
8	6%	57	941	998
9				
10				
11		6		ļ

Maximum Marine/Maximum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	34%	512	984	1,496
2				
3	62%	1,433	890	2,323
4				
5				
6	34%	259	497	756
7	34%	308	592	900
8	34%	355	683	1,038
9				
10				
11				

Minimum Marine/Minimum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	17%	95	467	562
2				
3	39%	256	406	662
4	39%	228	361	589
5	39%	77	122	199
6	17%	125	615	740
7	17%	149	731	880
8	17%	192	944	1,136
9				
10				
11				

Maximum Marine/Minimum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	37%	621	1,055	1,676
2				
3	65%	805	442	1,247
4	65%	817	448	1,266
5				,
6	37%	281	479	760
7	37%	335	569	904
8	37%	386	656	1,042
9				
10				
11				

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	36%	576	1,026	1,602
2				
3	64%	1,549	890	2,439
4				
5				
6	36%	273	487	760
7	36%	325	579	904
8	36%	374	666	1,040
9				
10				l
11				

Table J.6-2 FISCO/Port Vision 2000 EIS/EIR PM Peak Hour Truck Trip Generation

(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1				
2	i			
3				
4	74%	207	73	281
5	74%	134	47	181
6	22%	113	393	506
7	22%	118	410	528
8	22%	142	492	634
9				
10				
11		32		

No Project Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1				
2				1
3				
4	15%	80	467	548
5	15%	43	253	296
6	6%	36	600	636
7	6%	43	713	756
8	6%	50	820	870
9				
10				
11		5		

Maximum Marine/Maximum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	34%	447	859	1,306
2		ŀ		
3	62%	1,251	777	2,028
4				
5				
6	34%	226	434	660
7	34%	269	517	786
8.	34%	310	596	906
9				
10				
11				

Minimum Marine/Minimum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	17%	83	407	490
2				
3	39%	223	355	578
4	39%	199	315	514
5	39%	67	106	173
6	17%	109	537	646
7	17%	130	638	768
8	17%	168	824	992
9		·		
10				
11				

Maximum Marine/Minimum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	37%	541	919	1,460
2				
3	65%	702	385	1,088
4	65%	713	391	1,104
5				·
6	37%	246	418	664
7	37%	292	496	788
8	37%	337	573	910
9				
10				
11				

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	36%	503	895	1,398
2				
3	64%	1,351	776	2,128
4				
5				
6	36%	239	425	664
7	36%	284	504	788
8	36%	326	580	906
9				
10				
11				

Table J.6-3 FISCO/Port Vision 2000 EIS/EIR AM Peak Hour Truck Trip Generation (Inbound / Outbound Splits) (in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intermo	dal Trips	Over-the-l	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1					
2					
3					
- 4	115	123	41	43	322
5	74	79	26	28	208
6	63	67	217	231	578
7	66	70	228	. 243	606
8	79	84	274	292	728
9					
10					
11	17	19			36

No Project Alternative

Zone	Intermo	dal Trips	Over-the-F	e-Road Trips Total	
	Inbour 1	Outbound	Inbound	Outbound	Trips
1					
2					
3					
4	45	48	260	276	629
5	24	26	140	149	340
6	20	21	334	355	730
7	24	26	397	422	868
8	28	29	456	485	998
9					
10					
11	3	3			6

Maximum Marine/Maximum Rail Alternative

Zone	Intermod	dal Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	248	264	476	508	1,496
2					
3	694	739	431	459	2,323
4					į
5					
6	125	133	241	257	756
7	149	159	287	306	900
8	172	183	331	352	1,038
9					
10					
11					

Minimum Marine/Minimum Rail Alternative

Zone	Intermod	dal Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	46	49	226	241	562
2					
3	124	132	197	210	662
4	110	117	175	186	589
5	37	40	59	63	199
6	60	64	298	317	740
7	72	77	354	377	880
8	93	99	457	487	1,136
9					
10					
11					

Maximum Marine/Minimum Rail Alternative

Zone	Intermod	Intermodal Trips Over-the-Road Trips Total		Total	
L	inbound	Outbound	Inbound	Outbound	Trips
1	300	320	511	544	1,676
2					
3	390	415	214	228	1,247
4	396	421	217	231	1,266
5					
6	136	145	232	247	760
7	162	173	276	294	904
8	187	199	. 318	338	1,042
9					
10					
11					·

Zone	Intermod	dal Trips	Over-the-R	load Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	279	297	497	529	1,602
2					
3	751	799	431	459	2,439
4					i
5					
6	132	141	236	251	760
7	158	168	280	298	904
8	181	193	323	343	1,040
9					
10					
11					

Table J.6-4

FISCO/Port Vision 2000 EIS/EIR

PM Peak Hour Truck Trip Generation (Inbound / Outbound Splits)

(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intermod	dal Trips	Over-the-f	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1					
2					
3					
4	94	113	33	40	281
] 5	61	73	22	26	181
6	51	62	179	214	506
7	54	64	186	224	528
8	64	77	224	269	634
9					
10			Ì		
11	14	17			32

No Project Alternative

Zone	Intermod	dal Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1		***************************************			
2					
3					
4	37	44	213	255	548
5	20	24	115	138	296
6	17	20	273	327	636
7	20	24	325	388	756
8	23	27	374	447	870
9					
10					
11	2	3			5

Maximum Marine/Maximum Rail Alternative

Zone	Intermod	lal Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	203	243	391	468	1,306
2					
3	569	682	353	423	2,028
4					
5					
6	103	123	198	237	660
7	122	147	235	282	786
8	141	169	271	325	906
9	ļ				
10					
11					

Minimum Marine/Minimum Rail Alternative

Zone	Intermod	Intermodal Trips		Over-the-Road Trips	
	Inbound	Outbound	Inbound	Outbound	Trips
1	38	45	185	222	490
2	·				
3	102	122	161	193	578
4	90	108	144	172	514
5	31	37	48	58	173
6	50	59	244	293	646
7	59	71	290	348	768
8	76	91	375	449	992
9					
10					
11					

Maximum Marine/Minimum Rail Alternative

Zone	Intermod	lal Trips	Over-the-f	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	246	295	418	501	1,460
2					
3	319	383	175	210	1,088
4	324	389	178	213	1,104
5					
6	112	134	190	228	664
7	133	159	226	271	788
8	153	184	261	312	910
9					
10					
11					

Zone	Intermod	tal Trips	Over-the-F	load Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	229	274	407	488	1,398
2					
3	615	737	353	423	2,128
4					į
5					
6	109	130	193	232	664
7	129	155	229	275	788
8	148	178	264	316	906
9					
10					
11					

Table J.6-5 FISCO/Port Vision 2000 EIS/EIR Distribution from Marine Terminals to Rail Terminals AM Peak Hour

Existing Conditions

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3		
4	· 55.6%	60.8%
5	35.9%	39.2%
6		
7		
8		
9		
10		
11	8.5%	

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal	Over-the- Road Trips
1 2 3	100.0%	100.0%
4 5 6		
7 8		:
9		
11		

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-
:		Road Trips
1		
2		
3	49.6%	49.6%
4	50.4%	50.4%
5		
6		
7		
8		
9		
10		
.11		

No Project Alternative

Zone	lata vas a dal	Over-the-
Zone	Intermodal	
		Road Trips
1		
2		
3		
4	62.2%	64.9%
5	33.6%	35.1%
6		
7		
8		
9		
10		
11	4.2%	

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3		
4	45.7%	45.7%
5	40.6%	40.6%
6	13.7%	13.7%
7		
8		
9		
10		
11		

Zone	Intermodal	Over-the-
		Road Trips
1		
3		
3	100.0%	100.0%
4		
5 6		
6		
7		
8		
9		
10		
11		

Table J.6-6 FISCO/Port Vision 2000 EIS/EIR Distribution from Marine Terminals to Rail Terminals PM Peak Hour

Existing Conditions

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3		
4	55.6%	60.8%
5	35.9%	39.2%
6		
7		
8		
9		
10		
11	8.5%	

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal	Over-the- Road Trips
1 2		
2 3	100.0%	100.0%
4 5		
5 6		
7		
8		
9		
10		
11		

Maximum Marine/Minimum Rail Alternative

	 	
Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3	49.6%	49.6%
4	50.4%	50.4%
5		
6		
7		
8		
9		
10		
11		

No Project Alternative

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3		
4	62.2%	64.9%
5	33.6%	35.1%
5 6		
7		
8		
9		
10		
11	4.2%	

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
4	45.7%	45.7%
5	40.6%	40.6%
6	13.7%	13.7%
7		
8		
9		
10		
11		

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3	100.0%	100.0%
4		
5		
6		
7		
8		
9		
10		
11		

Table J.6-7
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Maximum Marine/Maximum Rail Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip	Trip Generation Rates	ion Rat	es		Trips Generated	nerated	
		Land Use			AM Peak Hour		PM Peak Hour		AM Peak Hour	k Hour	PM Peak Hour	k Hour
					르		드		드	Out	드	Out
Recreation				:								
Softball/Baseball	132,000 Sq. Ft.	Developed Regional Park	SANDAG	7.2 Acres	0.48	0.32	0.64	0.96	m	7	5	
Recreation Area	130,000 Sq. Ft.	(Included Above)										
Nature Study	50,000 Sq. Ft.	(Included Above)										
Beach	120,000 Sq. Ft.	Bay Beach	SANDAG	2.8 Acres			2.64	3.96		in .	7	1
Boat Launch	1 Ramp	(Included Below)			-							
Marina	116 Berths	Marina	ITE (420)	150 Berths	0.03	0.05	0.11	0.08	4	80	17	7
Roller Blading, etc.		(Included Above)										
Cummunity											•	
		Recreational Comm Ctr	ITE (495)	11,400 Sq. Ft.	0.67	0.41	0.39	0.99	œ	5	4	Ξ
Snack Bar, etc.	3,000 Sq. Ft.	(Included Above)										
Ceremonial Events	4,000 Sq. Ft.	(Included Above)					-					
Ceremonial Events	4,400 Sq. Ft.	(Included Above)										
Total Trips									15	15	33	40

Table J.6-8
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Minimum Marine/Minimum Rail Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip	Trip Generation Rates	tion Ra	sə		Trips Generated	nerated	
		and Ilse			AM Dea	k Hour	Pea Pea	AM Peak Hour DM Peak Hour AM Deak Hour DM Deak Hour	AM Peal	THOUSE THE	PM Dea	HOLL
					ul	Out	ln	Out	lu	Out	u	Out
Recreation												
Softball/Baseball	132,000 Sq. Ft.	132,000 Sq. Ft. Developed Regional Park	SANDAG	4.9 Acres	0.48	0.32	0.64	96.0	2	7	က	S
Recreation Area	80,000 Sq. Ft.	80,000 Sq. Ft. (Included Above)										
Beach	3,600 Sq. Ft. Bay Beach	Bay Beach	SANDAG	0.1 Acres			2.64	3.96		'	0	0
Cummunity												
Restaurant, etc.	33,600 Sq. Ft.	33,600 Sq. Ft. Recreational Comm Ctr	ITE (495)	33,600 Sq. Ft.	0.67	0.41	0.39	0.99	22	4	13	33
Total Trips									24	16	16	38

Table J.6-9
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Maximum Marine/Minimum Rail Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip	Genera	Trip Generation Rates	es		Trips Generated	nerated	
		Land Use			AM Pea	k Hour	AM Peak Hour PM Peak Hour AM Peak Hour PM Peak Hour	(Hour	AM Pea	k Hour	PM Pea	k Hour
					드	Out	п	Out	٤	Out	띡	Out
Recreation												
Softball/Baseball	140,000 Sq. Ft.	140,000 Sq. Ft. Developed Regional Park	SANDAG	11.7 Acres	0.48	0.32	0.64	96.0	9	4	7	+
Sports Field	175,000 Sq. Ft.	(Included Above)										
Recreation Area	145,000 Sq. Ft.	145,000 Sq. Ft. (Included Above)										
Nature Study	50,000 Sq. Ft.	50,000 Sq. Ft. (Included Above)			**							
Beach	62,000 Sq. Ft.	Bay Beach	SANDAG	2.9 Acres			2.64	3.96			80	1
Roller Blading, etc.	62,500 Sq. Ft.	62,500 Sq. Ft. (Included Above)										
Cummunity												
Restaurant, etc.	33,600	Recreational Comm Ctr	ITE (495)	37,600 Sq. Ft.	0.67	0.41	0.39	0.99	25	15	15	37
Snack Bar, etc.	4,000 Sq. Ft.	4,000 Sq. Ft. (Included Above)										
Total Trips									31	19	30	59

Table J.6-10
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Reduced Harbor Fill Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip	Genera	Trip Generation Rates	Sé	T	Trips Generated	nerated	
		Land Use			AM Pea	k Hour	AM Peak Hour PM Peak Hour AM Peak Hour	Hour	AM Peak		PM Peak Hour	k Hour
					드	Out	드	Ont	드	Out	۵	Ont
Recreation										·····		
Softball/Baseball	170,000 Sq. Ft.	170,000 Sq. Ft. Developed Regional Park	SANDAG	14.6 Acres	0.48	0.32	0.64	96.0	7	2	o	14
Sports Field	75,000 Sq. Ft.	75,000 Sq. Ft. (Included Above)						J. J				
Recreation Area	200,000 Sq. Ft.	200,000 Sq. Ft. (Included Above)										
Nature Study	100,000 Sq. Ft.	100,000 Sq. Ft. (Included Above)								· · · · · ·		
Amphitheater	90,000 Sq. Ft.	90,000 Sq. Ft. (Included Above)					***					
Beach	537,000 Sq. Ft.	Bay Beach	SANDAG	12.3 Acres			2.64	3.96			33	49
Cummunity												
Restaurant, etc.	33,600	Recreational Comm Ctr	ITE (495)	33,600 Sq. Ft.	0.67	0.41	0.39	0.99	22	14	13	33
Total Trips									29	19	55	96

Appendix J.7
Level of Service Calculations

Table J.7-1

NOBLD-AM.CMD	Tue Nov 5, 19	1996 13:08:31	:31		1.4	Page 1-1	, i	NOBLD-AM.CMD	I. CMD	F	Tue Nov 5, 1996 13:08:31	5 13:0	8:31			Page	1-2
	FISCO/Port Vision 2000 EIS No Project Alternative AM Peak Hour	n 2000 E lternati	EIS/EIR ive) 	 	 	1 1 1			FISC	FISCO/Port Vision 2000 EIS No Project Alternative AM Peak Hour		EIS/EIR				
	Trip Generation Report Forecast for AM Peak Hour	ion Repor	rt Hour		; ; ; ;	! ! ! !		Zone # Sub	Subzone Amount) 	Units	Rate In	Rate	Trips In	Trips	Total Trips	% Of Total
Zone # Subzone Ar	Amount Units	Rate In	Rate Out	Trips Trips In Out		Total % Trips I	% Of Total		Zone 28 Subtotal	otal ,		i .		456	485	941	21.8
1 FISCO 4 & 5 Z	200.00 Employees	0.28	0.05	5 5 5 1	1001	99	1.5	TOTAL				t • t • t • t • t • t • t • t • t • t •		. 2417	1909	4326	4326 100.0
2 FISCO 1,2,3 Sone 2 Sub	500.00 Employees Subtotal	0.28	0.05	140	25	165 165	e. e. e. e.										
4 SP Rail Term Sone 4 Sul	130.00 Employees Subtotal	0.40	60.0	52	12	64 64	1.5 2.5										
5 UP Rail Term 82.00 Zone 5 Subtotal	82.00 Employees btotal	0.40	0.09	33	7	40	e.0 e.0										
6 Middle Harbr 9 Zone 6 Sul	r 516.00 Employees Subtotal	0.26	0.05	134	7 7 8 8	160	3.7									•	
7 7th St Harbr 613.00 Zone 7 Subtotal	613.00 Employees btotal	0.26	0.05	159	31	190	ታ ታ ታ ታ										
8 Outer Harbor 706.00 Zone 8 Subtotal	706.00 Employees ubtotal	0.26	0.05	184	35	219	8. E.										
16 Middle Harbr Zone 16 Sv	1.00 Trucks Inter Subtotal	20.00	21.00	20	21	41	6.0										
17 7th St Harbr Zone 17 Si	1.00 Trucks Inter Subtotal	24.00	26.00	24	26 26	50	1.2										
18 Outer Harbor Zone 18 Si	1.00 Trucks Inter Subtotal	28.00	29.00	28	2 6 7 6 7 6 7 6 7 6 9 9 9 9 9 9 9 9 9 9 9	57 57	. H . 3										
24 SP Rail Term Zone 24 S	1.00 Truck External Subtotal	260.00	276.00	260	276 276	536 536	12.4 12.4										
25 UP Rail Term Zone 25 Si	1.00 Truck External 140.00 149.00 Subtotal	140.00	149.00	140	149	289	6.7										
26 Middle Harbr Zone 26 S	1.00 Truck External Subtotal	334.00	355.00	334 334	355 355	689	15.9 15.9										
27 7th St Harbr Zone 27 S	1.00 Truck External 397 Subtotal	397.00 422.00	422.00	397	422	819	18.9 18.9										
28 Outer Harbor	1.00 Truck External 456.00 485.00	456.00	485.00	456	485	941	21.8										
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NOBLD-AM.CMD

AM Peak Hour

Turning Movement Report AM Peak Hour

nd Total	Left Thru Right Volume		926	-					87 1812			0 988	0 1587				372 2112			0 621		0 2037			0	56 1956		-	0 956	9 2269		364 1186		364 2843		115 836	000
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Eastbound	Thru F	•	-	•	>		0	0	0		0	0	0		0	399	399		0	207	0	207		9	0	9		394	0	394		51	0	21		43	•
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Sol	Left Thru Right	•	-	•	>		103	0	103		0	0	0		0	267	267		0	0	0	0		56	0	26	880 Ra	16	0	16	B Ramps	72	0	72	Ramps	0	•
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Northbound	Left Thru Right	Burma	8/.	707	340	14th	91	147	238	Maritime/7th Ext	0	466	466	xt.	0	118	118	rbor/G	0	0	0	0	St./ 31	0	707	707	/W.Gre	33	0	33	5th/I	0	117	117	h/T-8	175	
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14.0 14.0 14.0 0.0 0.0 0.0 17.0

30.0 117.0 117.0 117.0 117.0 14.2 44.2 44.2 44.2 44.2 44.2 44.2 44.2 44.2 46

16

12

14

13

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Zone

To Gates

Percent Of Trips Existing Trip Distribution Report

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439 380 819

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NOBLD-AM.CMD	£	Tue Nov 5, 199	1996 13:08:31	3:31		Page	6-1	NOBLD-AM.CMD		Tue	Tue Nov 5, 1996	6 13:08:31	:31		Page	1-1
1 6 1 1 1 1 1 1 1 1 1 1 1 1	FISC	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	n 2000 E Lternati Hour	EIS/EIR ive	1 1 1 1 1 1	1 1 5 5 1 1 3 5	1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		FISCO,	FISCO/Port Vision 2000 BIS/BIR No Project Alternative AM Peak Hour	2000 E ternati Hour	IS/EIR re			
19 ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	omputati future V	ion Repor Volume Al	t ternati *****	* * * * * * * * * * * * * * * * * * *	1 4 4 1 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	1994 HCM O	Level Of perations ******** me/14th	Level Of Service Co Operations Method (F) ************************************	mputati uture V	Computation Report (Future Volume Alternative)	rnative		***************************************
<pre>cycle (sec): Loss Time (sec): Optimal Cycle:</pre>	<pre>************************************</pre>	**************************************	<pre>******* ritical verage L yel Of</pre>	Critical Vol./Cap. Average Delay (sec, Level Of Service:	****** . (X): :c/veh):	* * * *	0.265 8.9	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh) Optimal Cycle: 58 Level Of Service:	100 ec): 8	.00 8 (Y+R = 58	Cr Cr 4 sec) Av	Critical Vol./ Average Delay Level Of Servi	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): veh):	0.707 19.0	0.707 19.0 C
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••	0.10 0.48 0.00 0.03 0.20 0.00	0.00 0.62	0.62 0	0.20 0.00 0.40 0.00	0.20	0.00 0.00	0.00	Green/Cycle: Volume/Cap:	0.25 0.33	0.33	0.16 0.24 0.35 0.71	0.24 0	0.43 0.00	0.68 (0.43 0.00	0 0.43
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NOBLD-AM.CMD		Tue	Tue Nov 5, 1996 13:08:31	996 13:	08:31			Page	8-1	NOBLD-AM. CMD		Tue Nov	Nov 5, 1996	5 13:08:31	3:31	1	Page	e 9-1	;
		FISCO/1	FISCO/Port Vision 2000 BIS/BI No Project Alternative AM Peak Hour	on 2000 Alterna k Hour	EIS/El	: : : :	† ; ; 1 1	1 1 1 1 1 1 1			[Eu	ISCO/P No	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	2000 E ternati Hour	SIS/EIR ive	! ; ;	1 1 1 1 1	i ; ; ; ;	1
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Loss Time (sec): Optimal Cycle:	4	8 (Y+R =	4 sec)	Average Level (Average Delay (se Level Of Service:	(sec/veice:	en):	o M	ρg	optimal Cycle:	-	# + 1)	a sec/ Av	Level of	of Service:	. /	•	ָט	;
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Approach: Movement:	North Bound L - T -		South Bound	ound 'R'	J H	East Bound	2 Z	Mest bound	- R	Movement:	L - T		1 - 1	<u>۔</u> د	. T	2	1	24	_ ! بہ
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Added Vol:	25 466	0 0	0 488	4, 0	ч с	0 0	u c	9 0	o c	Added Vol: PasserBvVol:	0 0	<u>,</u> 0		30		90			0
rasserbyvor: Tnitial Fut:	46	0	4	33	7	0	. 4		0	Initial Fut:	118		267 137		55 399				372
	1.00		1.00 1.00		1.00			0	1.00	User Adj:	1.00							0.4.00	00 6
	1.00	1.00	Н	-	٠į		1.00 1.0	00 1.0	1.00	PHF Adj:		1.00	1.00 1.00	00.1	55 399	25	87 469		372
PHF Volume:	184 466	00	0 488	338	70	0 0	4, 2, c	00	o c	Reduct Vol:		0		0		0			. 0
Reduce Vol:	46	0	48	33	7	0	4 2	0	0	Reduced Vol:	38 118	57	267 137						372
	1.00		-		1.00			0	1.00	PCE Adj:	1.00					1.00	1.00 1.00	1.00	8 8
	1.05		Н		1.00		1.00 1.0	00 1.00	1.00	MLF Adj:	1.00 1.05 1	1.05	1.00 1.05 267 144	1.05 93	1.00 1.10 55 439	27			372
Final Vol.:	184 489	0	0 513	355	0/-1-)) ; ;	42		0 1 1 1 1	FINAL VOL.:	- :	<u>:</u>	- 1	=======================================	- ;	=	- '	-	-
Saturation Flow Module:	ow Module:				_		_		-	ď		-		:					9
Sat/Lane:			1900 1900		1900	1900		9	1900	Sat/Lane:	1900		1900 1900	1900	1900 1900	0061	1900 1900	00 1900	5 K
ment:	0.95 1.00	1.00	1.00 0.94	0.94	0.95	1.00	0.85 1.0	00 1 00	1.00	Adjustment: Lanes:	1.00 1.35	0.65					1.00 2.00		00
Final Sat.:	3800		0 2111		1805	0		0	0	Final Sat.:	2433	_	1805 2170	1402	1805 5316	327	1805 3800	00 1615	15
Canadity Analysis Module.	alubodule	-	!	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1	<u>-</u>	1 1 1 1 1 1 1		Capacity Analysis	 ysis Module	-	1	_		-			-
Vol/Sat:	0.10 0.13	00.0	0.00 0.24	1 0.24	0.04	0.00.0	0.03 0.	0.00 00.00	00.00	Vol/Sat:	0.05	0.05	0.15 0.07	0.07	0.03 0.08	0.08	0.05 0.13	13 0.23	23
Crit Moves:			* * *		* * *					Crit Moves:	* C	ć		0	000000000000000000000000000000000000000	000	90 0 91 0		0.62
	0.82		0.00 0.58	8 0.68	0.10	0.00	0.34 0.0	0.00 00.00	0.00	Green/Cycle: Volume/Cap:	0.12 0.20	0.20	0.45 0.19		0.30 0.41				37
volume/Cap:	0.42 U.16		0.00	- !		- :		3	- !					<u></u>			,		-
_ ř	rice Module:	- 0			-	c	14 3	0		Level Of Ser	Of Service Module:	21.8	17.4 14.5	14.5	27.3 22.7	22.7	22.4 18.		6.2
Delay/ven: Z1.0 1.Z		0.0	00 1 00 1	1.00	1.00 1.00		_	00	H	User DelAdj:							1.00 1.00		1.00
AdiDel/Veh:		0.0	0.0 7.7			0.0		٥.		AdjDel/Veh:	21.8	21.8	17.4 14.5	14.5	27.3 22.7	22.7	22.4 18.9		6.2
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计表示计算法 计计算法 计计算法 计计算计算 计计算计算 计计算 化二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基	*****	*****	****	*****	***		*****	*****	***	****	***	* * *	****	*	* * * * * * * * * * * * * * * * * * *	*			:

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PISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour		E	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	EIS/EIR cive	
1994 HCM Operations Methor ***********************************						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Intersection #7 Middle Harbor/Gate 2 ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	(b)	<pre>Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************</pre>	<pre>Level Of Service Computation Report HCM Operations Method (Future Volume Alt .************************************</pre>	Computation Report (Future Volume Alternative)	***********
CV71e (Sec): 100	*****************	******	Intersection #8 Adeline St./ 3rd St.	St./ 3rd St.	******	************
. (Oritical Vol./Cap. (X):	0.619	Cycle (sec): 100 Loss Time (sec): 12 (Y+R	= 4 sec)	Critical Vol./Cap. (X): Average Delay (sec/veh):	0.615 46.9
9	Level Of Service:	;	Optimal Cycle: 92	***************************************	Level Of Service:	***************************************
Approach: North Bound South Bound	Bound East Bound			d South Bound	East Bound	West Bound
Movement: L - 1 - K L - 1 - 1 - K L - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		1 1 1 1 1 1 1 1 1 1				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Control: Protected Prote	Protected Protected Trolude Trolude	Protected Include	Control: Split Phase Rights: Include	e Split Phase Include	Split Phase Include	Split Phase Include
een: 10 0 20 0	0	10 20	een: 10	2,	10,	10 20
Lanes: 1 0 0 0 1 0 0 0	0 0 0 0 0 1 1 0	1 0 2 0 0	Lanes: 0 1 0 1.	0 1 0 1	0 1 0 1 0	0 1 0 1 0
Volume Module:		_	Volume Module:	=	_	
53 0 45	0 0 0 39	08 338	8 0	26 0 26	62 7	60 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	Growth Adj: 1.00 1.00 I	31 26 0 26 31 26 0 26	4.00 1.00 6 29	50 59 56
2 0 28	0 0 207	57 217	. 0 70	0 95	0	0
1: 176 0 264	0		° 	0 0	0	0
t; 231 0 337	0 0 207	555	ut: 8 707	26 950	6 29	600
1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00	User Adj: 1.00 1.00 1 pur Adi: 1.00 1	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1	1.00 1.00 1.00
PHF AGJ: 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 1:00 1:00 1:00	41 555	me: 8 707	26 950	6 29	59
0 0 0	0 0	0	Reduct Vol: 0 0	0	0	0
7ol: 231 0 337	0 0 207 166	11 555	Vol: 8 707	26 950	9 ;	600
1.00 1.00 1.00	1.00 1.00 1.00 1.00	00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1	1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 Eingl Wolf 1.00 1.00	1.00 1.00 1.05 1.05	1.00 1.05 1.00 541 583 0		50.T	6 29	629
			·		-	;
Saturation Flow Module:	-	-	Saturation Flow Module:		•	
Sat/Lane: 1900 1900 1900 1900 1900	1900 1900 1900 1900	1900 1900 1900	1900	1900 1900 1900	1900 1900	1900
ment: 0.95 1.00 0.85 1.00	1.00 1.00 0.93 0.93	95 1.00	ment: 0.99 0.99	1.00 1.00 1.00	0.97 0.85	0.94 0.94 0.94
1.00 0.00 1.00 0.0	0.00 0.00 1.11 0.89	1.00 2.00 0.00	Lanes: 0.02 1.90 U		7 201 64.0 7501	
Final Sac.: 1805 U Lels U	0 1965 LS69					
.le:	-	-	Module	•	•	
Vol/Sat: 0.13 0.00 0.21 0.00 0.00	0.00 0.00 0.11	0.30 0.15 0.00	0.21 0.21	0.21 0.28 0.28 0.28	0.01 0.01 0.02 (0.05 0.05 0.05
* * *	* 0	· · ·	Crit Moves:		0.20	0.20 0.20 0.20
Green/Cycle: 0.33 0.00 0.33 0.00 0.00 0.00 0.00	0.00 0.00 0.20 0.20	0.4/0.8/0.00	1.01 1.01	1.01 1.01	0.04 0.09	0.24
rvice Module:		,	ervice Module:		1 1 C 8 O C 8 O C	8 21 8 21 8
20.2 0.0	0.0 0.0 24.0 24.0	.0 4.1	23.56 23.56	1 00 1	1 00 1 00	00 - [
1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00		47.5 47.5 47.5	20.8 21.1	21.8
O:0 70.7 0:0 70.7	0.1.2	7.F 0.1	1 28	2 37 2	0	-
Queue:		> + + + + + + + + + + + + + + + + + + +	*************	***************************************	************	************

NOBLD-AM.CMD		Tue Nov	5, 1996	1996 13:08:31	:31		Page	e 12-1	N	NOBLD-AM.CMD		4	Tue Nov 5, 1	1996 13:	13:08:31	1	Page	13-1
	PL	FISCO/Port Vision 2000 No Project Alternat AM Peak Hour	O/Port Vision 2000 EIS No Project Alternative AM Peak Hour	2000 E. ernativ	EIS/EIR	1 1 1 1 1	t t 1 1 t t t t	; ; ; ; ; ;	i			FISCO	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	t Vision 2000 oject Alterna AM Peak Hour	EIS/EIR tive	 	1 1 1 3 3	1
1 ************************************	Devel Of Service Computation Report Devel Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	1 Of Service tions Method ************************************	ice Commission (Fut ************************************	outatic cure Vo	Computation Report (Future Volume Alternative)	rt lterna *****	* * * * * * * * * * * * * * * * * * *		; # 	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	1994 HCM (************************************	Level Of Serv HCM Operations Met ************************************	Level Of Service Operations Method	rice Computathod (Future	e Computation Report d (Future Volume Alternative) ************************************	ernativ	* *	***************************************
<pre>cycle (sec): Loss Time (sec): Obtimal Cycle:</pre>	<pre>************************************</pre>	(Y+R = 4 S	**************************************	tical rage Dusl sl of t	**************************************	ip. (x) sec/veh	* * *	0.528 17.6 C		/*************************************	C):	100 12 (Y+R 82	. Be	Critica Average Level C	Critical Vol./Cap. (X) 4 sec) Average Delay (sec/veh Level Of Service:	Cap. (X): (sec/veh): ce:	* 5 * 5 * 5 * 5 * 5 * 5 * 5 * 5 * 5 * 5	0.752 21.4 C
Approach:	**************************************	**************************************	********* South Bound	4 * * * * * * * * * * * * * * * * * * *	****** East I	******** East Bound	* & * * 1	**************************************		Approach: North Bound Movement: L - T - R	North Bound L - T -		South Bound	Bound - R	East Bound	ound - R	West 1	West Bound
	Protected	=	Protected		Protected	cted	- Prot	Protected	· • ·	Control:	Protected	cted	 Protected Trallide	otected	Split Phase	lase	Split Phase Include	it Phase Include
Rights: Min. Green:	Include 10 20	10	Inclu 20	20	10	lude 0	0 10	30		Kignts: Min. Green:	10 20	0 7	10 1	20 20	10 10	1 20	10 2	20 20
Lanes:	2 0 . 0 1	0 1 0	0 1		1 0 1	1 1		0 1	- -	Transport of the state of the s	-	•	,	1			! !	1
Volume Module:	c		ä	4.7	48 394	94 438	0	300	У Щ	Volume Module Base Vol:		0	72		256	0		
Base vol: Growth Adj:	-	1.00	1.00.1	7	00.		1.00	1.0		Growth Adj:	1.00 1.00	0 1.00	1.00 1.00	0 1.00	1.00 1.00	1.00	1.00 1.00 0 169	0 1.00 9 364
Initial Bse:	0 33	0 16	78	47	48 394	94 438 0 403	147	000	- K	initiai bse: Added Vol:	11	43			•	227		
PasserByVol:	0		0	0			0			PasserByVol:	;	0 77 0	0 0	0 0	0 0 256 51	227	0 0 546 169	364
Initial Fut:	33	16	28	47	48 394	394 841	147	300 3.00		Initial Fut: User Adj:	1.00 1.00		1.001		1.00 1		1.00 1.00	
User Adj: PHF Adj:		1.00 1.00	1.00		1.00 1.00		1.00			PHF Adj:	-4		1.00	0 1.00	1.00 1.00	1.00	1.00 1.00	1.00
PHF Volume:	33	н	28	47	48 35	394 841	147	300	on c	PHF Volume: Reduct Vol:	0 0	0 0			0			
Reduct Vol: Reduced Vol:	0 0 271 33 1	0 0 134 16	78	47			147			Reduced Vol:	153 117		72		256		546 169	182
PCE Adj:	1.00	1.00	1.00				1.00			PCE Adj:	1.00 1.00	0.1.00	1.00 1.00	1.00	1.10 1.10	1.10	1.00 1.05	
MLF Adj: Final Vol.:	1.03 1.00 1. 279 33 1	1.00 1.00	1.00	1.00 1	1.00 1.00 48 394	-	1.00	315 9		Final Vol.:	153 117		72		282	250	546 1	177 191
			1	<u></u>	1 1 1 1 1 1	1			-	Caturation F	Flow Module			1	: : : : : :	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		!
Saturation F Sat/Lane:	1900		1900				1900				1900 1900	00 1900	1900 1900	1900	1900 1900	1900	1900 1900 0.92	00 1900 92 0.92
Adjustment:	0.88	0.88 0.95	0.91	0.91 0	0.95 1.00	1.00 0.85	1.00	1.00 1.00		Adjustment: Lanes:	1.00 1.00		1.00		1.67			
Lanes: Final Sat.:	3610 330 13		645				1805		_	Final Sat.:	1805 1900	00 1615	1805 2292	1318	2921 580	1750	1805 1682	32 1815
Capacity Analysis	Module:	-		=	, <			0 0	 ι σ	Capacity Analysis		Module: 0.06 0.27	0.04 0.13	13 0.13	0.10 0.10	0.14	0.30 0.11	11 0.11
Vol/Sat: Crit Moves:	0.08 0.10 0	10 0.01	* * 0	*0.0	50.0		***) }	,	Crit Moves:			,		6	* 0	****	75 0 75
Green/Cycle:	0.13 0.22	0.22 0.11 0.46 0.08	0.20	0.20	0.19 0.0	1.44 0.44 1.47 0.62	0.13 0	0.38 0.38 0.22 0.22		Green/Cycle: Volume/Cap:	0.11 0.21 0.81 0.30	21 0.58 30 0.47	0.40 0.66	20 0.20 56 0.66	0.48 0.48			
		_			- 1	!	_		· -	Level Of Service Module:	vice Modu	 lle:		! !		-	- -	
Level Of Ser Delay/Veh:	odule: 22.7		21.7		21.7 12		29.8 1	3.4		Delay/Veh:	43.1 21.8	8.0	28.0 25.3	.3 25.3	1.00 1.00	26.2	23.1 14.1	14.1 14.1 1.00 1.00
User DelAdj:		1.00 1.00 22.7 25.9	1.00	1.00	1.00 1.221.7 12	1.00 1.	1.00 1.00 1 14.2 29.8 1	1.00 1.00 13.4 13.4		User DelAdj: AdjDel/Veh:	43.1		28.0		23.1			
Onene:	н 8	3 0	eri (П	H 3	80 }	19 4	0 9	*	Queue:	5	3	2 *****	****	·***********	, * * * * * *	******	. * * * * * *
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Processor Proc	NOBLD-AM. CMD	Tue Nov 5, 1996 13:08:31	:08:31	Page 14-1	NOBLD-AM.CMD	Tu	Tue Nov 5, 1996 13:	13:08:31	Page 15-	
194 HOT Operation Report 1954 HOT Operation Name 1954 HOT Operation Without 1954 HOT Operation 1954 HOT	[G	ISCO/Port Vision 200 No Project Altern AM Peak Hour	0 EIS/EIR ative			FISCO	Port Vision 2000 Project Alterna AM Peak Hour			,
100 100	1994 HCM Opera	al Of Service Comput ations Method (Futur ***********************************	ation Report e Volume Alternati:		19 ************************************	Level O. 94 HCM Operation	Service Computa	tion Report Volume Alternat:	1,00)	* *
North Bound South Bound East Bound West Bound Mest Bound Morth Bound Nor	**************************************	**************************************	al Vol./Cap. (X): e Delay (sec/veh): of Service:	*	Cycle (sec): Loss Time (sec Optimal Cycle:	100 :): 10 (Y+R 70	Critica 4 sec) Average Level C	<pre>11 Vol./Cap. (X): Delay (sec/veh))f Service:</pre>		
The color of the	######################################	**************************************	**************************************	******** West Bound	*********** Approach: Movement:	**************************************	South Bound L T R	East Bound L - T - R	West Bound	nd R
1	 Pr	Protected Include	Split Phase Include	Split Phase Include	Control: Rights:	Protected Include	Protected Ovl	Protected Include	Protected Include	
1.00 1.05 45 0.154 31 24 43 13 26 31 115 1	0 20	0 20	10 20 0 1 0 1	10 20 0 1 1	Min. Green: Lanes:	20	20 0	0	0 20	0 0
100 100		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	, , , , , ,	Volume Module:		! ! ! !		! !	<u> </u>
1. 1.00 1.00	0 175	0 154	24 43	5 31	Base Vol:	548	000	1.00 1.00 1.00	1.00 1.00	1.00
11. 0 0 0 227 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 1.00	0 154 0 154	24 43	31	Initial Bse:	54.8	000	16	0 62	н с
1.00 1.00	0 0	00	00	0 0	Added Vol: PasserByVol:	. 0	0	N 0		0
1.00 1.00	0 175	0 154	24 43	31	ut:	548	0	227 18	0 70	H (
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 1.00	1.00 1.00	1.00 1.00	1.00		1.00	1.00	1.00	1.00 1.00	1.00
1.00 1.00	0 1.00 0 1.00	1.00 1.00	24 43	31		548	0	18	0 70	H
100 101 102 102 103	0	0	0 0	0	Reduct Vol:	0 0	o c		0 0	٥ -
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0 175	0 154	24 43	31	••	1.00	1.00	1.00 1.00 1.0	1.00 1.00	1.00
Final Vol.: 564 575 22 17 0 417 227 Final Vol.: 564 575 22 17 0 417 227 Final Vol.: 564 575 22 17 0 417 227 Final Vol.: 564 575 22 17 0 417 227 Final Vol.: 564 575 22 17 0 417 227 Final Vol.: 584/Lane: 1900 1900 1900 1900 1900 1900 1900 190	1.00 1.00	1.00 1.00	1.05 1.05	1.00	Adj:	1.05	1.00	1.00 1.05	1.00 1.05	1.05
341 2 0 0 0 1900 1900 1900 1900 1900 1900	.: 0 193	0 162	25 45	31	Final Vol.:	575	0		0 74	
1900 1901 1901 1902 1901 1903 1903 1903 1903 1903 1903 1903	ı	1 0 0		;	Saturation Flo		1900	1900 1900 1900	1900 1900	1900
0.00 1.18 1.82 0.00 1.66 0.34 0.60 1.07 0.33 1.00 1.00 1.00 Lanes: 1.00 1.93 0.07 1.00 0.00 2.00 1.00 0.2035 3152	1,00 0.91	1.00 0.97	0.96 0.96	95 1.00		0.99	1.00	0.95 1.00	1.00 1.00	1.00
Analysis Module: Analysis Module: Analysis Module: O.00 0.09 0.09 0.09 0.00 0.05 0.02 0.02 0.02 0.00 0.07 O.00 0.09 0.09 0.09 0.00 0.05 0.02 0.02 0.02 0.00 0.07 O.00 0.09 0.09 0.09 0.00 0.05 0.02 0.02 0.02 0.00 0.07 Cle: O.00 0.22 0.22 0.22 0.20 0.20 0.47 0.47 April Moves:	0.00 1.18 Sat.: 0.2035	0.00 1.66	0.60 1.07 0 1086 1955	00 1.00 05 1900		1.93 3623	0.00	1.00	0.00 1.97	51.0
Autilysts Module: 0.00 0.05 0.05 0.05 0.05 0.02 0.02 0.02					Capacity Analy	vsis Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	; ; ; ; ; ; ;	1 1 1 1 1 1 1 1	
0.22 0.00 0.22 0.22 0.20 0.20 0.20 0.47 0.47 0.47 0.47 0.47 0.47 0.47 0.4	Analysis module	50.0 00.0 60.	0.02 0.02	.20 0.02	Vol/Sat:		00.00	0.13	0.00 0.02	0.02
0.42 0.00 0.24 0.24 0.12 0.12 0.12 0.42 0.03 0.15	0.00 0.22	0.00 0.22	0.20 0.20	0.47		0.37	0.00	0.14	0.00 0.20	0.20
Level Of Service Module: 21.7 0.0 20.6 20.6 21.2 21.2 21.2 11.7 9.3 9.9 Delay/Veh: 28.6 15.3 15.3 21.6 0.0 16.1 45.7 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0.00 0.42	0.00 0.24	0.12 0.12	0.03 0		5.4.0				-
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Level Of Service Module: Delav/Veh: 0.0 21.7 2:	0.0 20.6	21.2 21.2	.7 9.3	Level Of Serv. Delay/Veh:	••	0.0	45.7 14.0	0.0 21.1	21.1
0.0 21.7 21.7 0.0 20.6 20.6 21.2 21.2 21.2 11.7 9.3 9.9 Adjuel/Ven: 28.6 15.3 15.3 21.6 UV 16.1 %27.7 0 5 7 0 4 1 1 1 0 7 0 2 Queue: 17 12 1 0 0 9 8 8 0 5 7 0 4 1 1 1 1 0 7 0 9 8 8 0 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.00 1.00	1.00 1.00	1.00 1.00	00 1.00		1.00	1.00	1.00	1.00 1.00	1,00
**************************	0.0 21.7	0.0 20.6	21.2 21.2	.7 9.3		15.3	. 0	0 8 0	0.0 21:1	1.17
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, 1 1 1 1 2 1 1 1 1 1 1	1 1 1 1 1 1 1 1	FISCO/	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	t Vision 200 oject Altern AM Peak Hour	lon 2000 EIS. Alternative ak Hour	/EIR				ŀ			FISC	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	2000 EI ernativ lour	S/EIR e				
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ch: North Bound South Bound East Bound: L	<pre>******** ycle (sec): oss Time (sec) ptimal Cycle</pre>	* * * * * * * * * * * * * * * * * * *	***** 100 11 81	****** (Y+R	* 	sec) B	***** ritica verage evel 0	****** 1 Vol./ Delay f Servi	/Cap. (sec/lice:	(X): (veh):	* * *	****** 0.434 20.6 C	* 4 0 D * *
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ty Analysis Module: tt: 0.00 0.07 0.07 0.20 0.13 0.13 0.04 0.11 fove: 0.20 0.07 0.07 0.03 0.33 0.33 0.10 0.24 'Cycle: 0.20 0.20 0.33 0.33 0.38 0.36 0.43					<u> </u>					-	:	1	
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	olume/Cap:	0.02	0.33	0.33	09.0	0.38	0.38	.36	4.	0.43	0.41	09.0	09.0
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	FISCO/FORT VIBION 2000 BIS NO Project Alternative PM Peak Hour		five	<u>.</u>				FISCO/Port Vision 2000 EIS/EIR No Project Alternative DM Peak Hour		
	Trip Generation Report	ıtion Repo	ort					Rate	Trips Trips	Total % Of
	Forecast for PM Peak Hour	: PM Peak	Hour					Subzone Amount Units In Out	In Out	Trips Total
Zone # Subzone	Amount Units	Rate	Rate	Trips	Trips Trips In Out	Total Trips	% Of Total	Zone 28 Subtotal	374 447	821 21.7
1 FISCO 4 & 5 Zone 1 Si	200.00 Employees Subtotal	90.0	0.21	1 12 12	4 4 2 2 2	54 54	1.4	TOTAL	1533 2247	3780 100.0
2 FISCO 1,2,3 500.00 Zone 2 Subtotal	500.00 Employees	90.0	0.21	1 30	105	135	9.e 9.e			
4 SP Rail Term 130.00 Zone 4 Subtotal	130.00 Employees	0.10	0.36	6 13	47	09	1.6			
5 UP Rail Term 82.00 Zone 5 Subtotal	82.00 Employees	0.10	0.36	eo eo •	30	38	1.0			
6 Middle Harbr 516.00 Zone 6 Subtotal	516.00 Employees	90.0	0.22	2 31 31	114	145 145	3.8 8.8			
7 7th St Harbr 613.00 Zone 7 Subtotal	613.00 Employees	90.06	0.22	2 37 37	135	172	4. 4. 6. 6.			
8 Outer Harbor Zone 8 S	706.00 Employees Subtotal	0.06	0.21	11 42	148	190	ъ. 0.0			
16 Middle Harbr Zone 16	e Harbr 1.00 Trucks Inter Zone 16 Subtotal	17.00	20.00	10 17 17	20	37	1.0			
17 7th St Harbr Zone 17	1.00 Trucks Inter Subtotal	20.00	24.00	20 20	24	44	1.2			
18 Outer Harbor Zone 18	1.00 Trucks Inter Subtotal	23.00	27.00	23	3 27	50	1.3			
24 SP Rail Term Zone 24	1.00 Truck External Subtotal	al 213.00	255.00	00 213	3 255	468	12.4 12.4			
25 UP Rail Term Zone 25	1.00 Truck External Subtotal	al 115.00	138.00	00 115 115	138	253 253	6.7			
26 Middle Harbr Zone 26	1.00 Truck External 273.00 327.00 Subtotal	al 273.00	327.0	00 273 273	3 327	009	15.9			
27 7th St Harbr Zone 27	t Harbr 1.00 Truck External 325.00 388.00 Zone 27 Subtotal	al 325.00	388.0	325	388	713 713	18.9			
28 Outer Harbor	1.00 Truck External 374.00 447.00	al 374.00) 447.(374	447	821	21.7			
Traffix 6.8.1412	2 (c) 1995 Dowling Assoc. Licensed to Dowling Assoc.,	soc. Lice	snsed t	o Dowlin	ng Asso		Oakland	Traffix 6.8.1412 (c) 1995 Dowling Assoc. Licensed to Dowling Assoc., Oakland	wling Asso	c., Oakland

Property Vision 100 mg/Mark Prop	NOBLU-PM.CMU	J.W.		MOII	MOII NOV 4, 1996 LD:U6:42	30:CT 96	77.	rage z-r	111111111111111111111111111111111111111	, , , , , , , , , , , , , , , , , , ,			}					1	1	1	
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1									Volume		rthbou		Sou	thboun		East	ound		Westbo	יים	Tora
4 5 111 12 13 14 15 16 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18					Gates				Type	Left	rhru R		Left T	hru Ri		ift Thi	u Righ		t Thru	Right	Volume
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NOBLD-PM.CMD	M. CMD			Moı	VON L	Mon Nov 4, 1996 15:06:42	15:(06:42			д	Page 4-4	4	NOBLD - PM . CMD	Mon Nov 4,		1996 15:06:42		Page 5-1
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			FISCO	/Port > Proj	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	1 2000 ternat	EIS/E	IR	! ! ! !	! ! ! ! !	! ! ! !	 		FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	t Vision 200 oject Altern PM Peak Hour	O/Port Vision 2000 EIS/E) No Project Alternative PM Peak Hour	IR.	
Volume Type	u u	NB Link	ık Otal	H H	SB Link Out Total	ık otal	# # # # # # # # # # # # # # # # # # #	EB Link Out Total	k otal	M In	WB Link Out To	tal	Total Volume		Impact Ar Level	nalys Of S	Impact Analysis Report Level Of Service		
														Intersection			e O	ure	Change
#217	c	9	-	9	c	9	7.4.7	c	-47	c	-47	-47	-132			LOS	Del/ V/ Veh C	Del/ V/ LOS Veh C	ut
Added	0	61	119	119	00	13	47	0 0	47	0	47	47	132	# 3 Maritime/Burma		m m	7.2 0.2	B 9.9 0.305	+ 2.740 D/V
Total	0	0-	0	0	0	0	0	0	0	0	0	5	0	# 4 Maritime/14th		C	15.9 0.392	C 19.7 0.728	+ 3.786 D/V
#218 Base	-39	0	-39	0	-70	-70	-47	0	-47	0	-16	-16	-172	# 5 Maritime/7th Ext.		щ	6.0 0.156	B 10.6 0.313	+ 4.678 D/V
Added Total	39	00	39	00	70	70	47	00	47	00	16	16 0	172 -0	# 6 7th/7th Ext.		щ	5.8 0.018	C 18.6 0.399	+12.831 D/V
#219														# 7 Middle Harbor/Gate	2	B 1	13.5 0.296	C 19.4 0.756	+ 5.938 D/V
Base Added	-70 70	0 0	-70 70	00	-70 70	-70 70	00	សួស	សួស	ណុំ ល	00	សុស	-150 148	# 8 Adeline St./ 3rd S	St.	C	19.2 0.084	D 38.1 0.613	+18.979 D/V
Total	-1	0	-1	0	4	Ţ.	0	0-	0-	0	0	0	-5	# 12 Maritime/W.Grand/I-880 Ramps	-880 Ramps	B 1	12.4 0.237	C 18.6 0.415	+ 6.228 D/V
#220	c	119	-19	-37	o	-37	0	-23	-23	ų	0	Ŋ	. 84	# 13 Adeline/5th/I-880 SB Ramps	SB Ramps	C	17.5 0.328	C 20.4 0.522	+ 2.917 D/V
Added	000	119	61	37	00	37	0 0	23	23	s 0-	00	rv o	83	# 14 Union/5th/I-880 NB Ramps	Ramps	В	12.5 0.178	C 16.3 0.214	+ 3.865 D/V
# 200E	•	•	1											# 15 7th/I-880 NB Ramp/Frontage Rd	Frontage Rd.	д	11.2 0.079	C 19.2 0.417	+ 7.984 D/V
Base	00	00	00	00	ر د د	តិ ស	00	-278	-278	-283	00	-283 282	-566 565	# 16 7th/I-880 SB Ramp		4	2.6 0.113	B 6.3 0.466	+ 3.742 D/V
Total	0	0	0	0	0	0-	0	0 -	0-	7	0	-1	-1	# 17 14th/I-880 Frontage Rd	re Rd.	4	1.9 0.000	C 1.8 0.000	+ 0.000 V/C
#226 Base	0	0	0	-16	0	-16	-375	0 (-375			-391	-782	# 18 W.Grand/I-880 Frontage Rd	tage Rd.	0	21.1 0.505	C 21.6 0.614	+ 0.458 D/V
Added	0 0	00	00	16	0 0	9 0	۲/۶ ۱۰	0 0	0-	00	0	0	0 0						
#244 Base	0	0 (0		-226	528	-270	-339	609-	-37	44-	. 181	-1218						
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NOBLD-PM.CMD	Mon	Mon Nov 4, 199	1996 15:06:42	6:42			Page	6-1	NOBLD-PM.CMD	24	Mon Nov 4, 1996	15:06:42	2	1	Page 7	7-1
	FISCO/	FISCO/Port Vision 2000 BIS/BIR No Project Alternative PM Peak Hour	a 2000 Lternat Hour	EIS/EII	: : : : : : cd	1 1 1 1 1	1 1 1 1 1 1	 		BISC	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	000 EIS rnative ur	/EIR	1 1 1 1 2	 	
Level of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Level Of Coperation ************************************	Service S Method	omputat Future ******	Computation Report (Future Volume Alternative)	port Altern	native)	* *	t #	**************************************	Level Of Scrvice 1994 HCM Operations Method ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	utation ure Vol	Computation Report (Future Volume Alternative) ************************************	ernative	****	* * *
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Cycle (sec): Loss Time (sec):	100 8 (Y+R =	4 sec)	Average Delay	Delay	(sec/veh)	eh):		6.6			= 4 sec)	age Del	Delay (sec,	/veh):	19.7	
Optimal Cycle: 58 Level Of Service:	58	L.c.	evel Of	Level Of Service:	Ce:	****	#*******	* * * * * * *	Optimal Cycle: **********	. 58	Level Of Service:	*******	OF Service:	*****	*********	* * * *
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	1	î	10	0	0 1	: :	0 0 0	。 。	Lanes:	0 1 1	1 0 1	0	0 11	0 0	1 0 0 1	1 0
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Z.		0	119		0				Initial Fut:	229 601 28	105 252	91 128	128 0	303	1.00 1.00	1.00
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. 0.24	0.62 0.00	00.00				0			Green/Cycle:	0.24 0	0.12 0.20	0.20	0.56 0.00	0.72	0.56 0.00	0.32
10	0.40 0.00	0.00 0.26	0.26	0.53 0	0.00	0.15 0	00.0 00.	00.00	Volume/Cap:	0.79 0.73 0.73	0.48 6.49	=		•		
ervice Mo		: : : : : : : : :	:	-		_		•	Level Of Service Module	vice Module:	27.9 23.4	23.4 16	16.7 0.0	5.8	7.2 0.0	7.7
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No Project Visition 2000 EIS/EIR																	
Secretions Service Computation Report		FISC	O/Port Vision No Project A' PM Peak	n 2000 E. lternati ¹ Hour	IS/EIR ve						FISCO/	Port Vision Project A. PM Peak	n 2000 lternat Hour	SIS/EIR ive			; ; ;
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**************************************	**************************************	********* South R L -	**************************************	H # #	******** East Bound - T -	# # # Z	***** West Bo - T	***** und - R	Approach: North Bound Movement: L - T - R	North Bound	Bound - R	South Bound	ound - R	East Bound	und - R	West I	West Bound - T - R
Control:	Protected	 Prot	Protected Trolude	 Pr	Protected Trollide	<u>:</u>	Protected Thelude	- p e	Control: Rights:	Split Phase Include	it Phase Include	Split Phase Include	 hase ude	Split Phase Include	ase de	Split Phase Include	it Phase Include
kignes: Min. Green: Lanes:		20 0 1 0 0	0	0	20	20 1	10 20		Min. Green: Lanes:	10 20 0 1 0	1 0	10 20	1 0 1	10 20	20	10 20	20 20 0
Volume Module:		<u>:</u>		<u>-</u>	! !	<u> </u> =	! !	- : c	Volume Modul	e: 36	0 122	43 0	15	30 14	13	89	39 78
7	1.00 1	1.00 1	.00 1.0	1.00		۲.	 	1.00	Growth Adj:	1.00 1.0	н	1.0	i.			÷	i.
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	1.00	1.00 1		1.00		1.00 1.00		1.00	PHF Adj:	1.00 1.00	0 1.00	1.00 1.00	1.00	1.00 1.00 30 14	1.00	1.00 1.00 89 39	1.00
PHF Volume:	219 0 5	523		0			٠,	, 0	Reduct Vol:						0		
. ::	0	0		0	421		01	0 ;	Reduced Vol:	36 874	122	43 572	15	30 14	13	89 39	39 78
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							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1	Saturation Flow Module:	low Modul	 e:	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-		
Saturation from Sat/Lane: 19		1900		1900	1900			1900	Sat/Lane:	1900 1900		1900 1900	1900	1900 1900	1900	1900 1900	0061 00
ment:		0.85 1.00 1	1.00 1.00	1.00	0.94	0.94 0.	0.95 1.00	1.00	Adjustment: Lanes:	0.07 1.69	9 0.24						
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••	0.00	0.43 0.00 0	0.00	0.00	****	0.28 0.2	29 0.57	00.00	Crit Moves: Green/Cycle: Volume/Cap:	. 0.30 0.30 0.97 0.97	0.30	0.18 0.18 0.97 0.97	0.18	0.20 0.20 0.08	0.20	0.20 0.20 0.29	20 0.20 29 0.29
Volume/cap: 0	0.28 0.00 0.		- !			_	. :					- !	- !			1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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The Project Alternative Properties Pro	NOBLU-FM.CMU	E	Mon Nov 4, 1996 15:06:42	15:06:43	~ 1		Page: 12-1	_	NOBLD-PM.CMD		Mo	Mon Nov 4, 1	1996 15:06	6:42		Page	13-1
1394 Conventions Recibed (Prince Volume Alternative) 1394 Conventions Recibed (Prince Volume Alternative) 1394 Conventions Recibed (Prince Volume Alternative) 1394 Conventions Recibed (Prince Volume Alternative) 1394 Conventions Recibed (Prince Volume Alternative) 1394 Conventions 1394 Conventions Reciped (Prince Volume Alternative) 1394 Conventions 1		FISC	O/Port Vision No Project Alt PM Peak F	2000 EIS, ernative Jour	EIR						FISCO	Port Visi Project PM Pea		EIS/EIR ive	1 1 1 1 1 1 1)) ; ; ; ;	1 1 1 1 1 1
10 (178 4 cm) 10 (1994 ***********************************	Level HCM Operati ************************************	Of Service Con ons Method (Ft ************************************	nputation iture Volu	Report nme Alter	native) ******		*	**************************************	1994 HCM ********	Level 0: Operation ******:	Service 1s Method 1******	Computat (Future *******	ion Repor Volume Al	t ternati *****	(6)	
1, 10 1, 1	*****	********	***********	*******	******	*******	*****	***	****	*****	*****	*******	******	********	*****	*******	******
The control of Contr	Cycle (sec):	_	Cri	tical Vol	L./Cap. (: (x	0.415		Cycle (sec):		00		Critical	Vol./Cap		0	522
The control The control	Loss Time (sec):		= 4 sec) Ave	rage Dela	y (sec/v	eh):	18.6		Loss Time (s	ec):	(Y+R	4 sec)	Average	Delay (se	c/veh):	23	4.0
North Bound South Bound	Optimal Cycle: ***********	70	Lev	rel Of Ser	vice:	*	0	,	Optimal Cycl	•	82	4	Level of	Service:	4	4	ט
Land Land	Approach:	orth Bound	South Bour	ld E	ast Boun		lest Boun		Approach:	•	Bound	South B	puno	East Bo	ound	West	Bound
Proceded Proce	<u>;</u>	- L	' :	-		=	H	- 24	Movement:	1	1	L . I	ا ا		ez ı		<u>بر</u> ا
Tricillade Tri	Control:	Protected	Protected		rotected		rotected		Control	Drote		Darotte	 	Chlit D	1 0 0 0	Gr.] 4+	
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366 20 140 0 0 0 0 0 0 0 0 0		23	9 23		454		624	13	Initial Bse:	0		241 0		138 157		0 20	
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High Notes Hig		1.00	1.00 1.00		1.10		1.05	05	MLF Adj:	1.00 1.0							
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The color of the		20.0	20.0				00.	00	Adjustment:	0.95 1.0			6.0				
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alysis Module: 0.10 0.10 0.00 0.03 0.01 0.18 0.18 0.06 0.18 0.18 **** **** **** **** **** **** ****	_	; ; ; ;		=	7 7 7	1		20	FILIAL SAL.:	1001							
0.10 0.10 0.00 0.03 0.03 0.01 0.18 0.18 0.18 0.18 0.18 0.18 0.19 0.10 0.10 **** **** **** **** **** **** ****	Capacity Analysi	s Module:	· ·	=				_	Capacity Ana	Vais			-			1	1
Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Green/Cycle: 0.21 0.20 0.51 0.21 0.20 0.16 0.16 0.16 0.16 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	Vol/Sat: 0.1	0 0.10 0.10	0.00 0.03		0.18	0.0	0.18 0	18	Vol/Sat:	0.11	,		0.05				
Green/Cycle: 0.21 0.27 0.14 0.20 0.20 0.16 0.37 0.37 0.37 0.12 0.33 0.33 Green/Cycle: 0.21 0.20 0.51 0.21 0.20 0.20 0.16 0.16 0.16 0.31 0.31 0.31 0.50 0.50 0.36 0.36 0.36 0.36 0.36 0.36 0.36 0.3			***		* * * *	*			Crit Moves:								
0.50 0.36 0.36 0.04 0.13 0.13 0.07 0.50 0.50 0.50 0.54 0.54 0.54 0.54 0.54 0.42 0.62 0.64 0.24 0.24 0.52 0.53 0.64 0.51			0.20		0.37	0.1	0.33	33	Green/Cycle:				0.20				
		0.36	0.13		0.50	0.5	0.54	54	Volume/Cap:				0.24				
Level Of Service Module: 22.9 19.1 19.1 24.2 21.2 22.9 15.8 15.8 28.2 18.2 18.2 Delay/Veh: 23.9 22.7 12.4 25.7 21.8 21.8 25.1 25.2 25.2 21.0 18.8 11.00 1.00 1.00 1.00 1.00 1.00								-				1 1 1 1 1 1			<u></u>	1 1 1 1 1 1 1 1 1	·
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22.3 13.1 21.2 21.2 22.3 13.6 13.8 26.2 18.2 Adjuel/Ven: 23.9 22.7 12.4 25.7 21.8 25.1 25.2 21.0 18.8 9 1 3 0 1 1 0 11 10 3 15 0 Queue: 5 4 11 6 2 2 4 5 4 9 5			1.00		1.00 1.00 0.1		1.00	00	User DelAdj:	1.00 1.0			1.00			1.00 1.00	
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; ; ; ; ; ; ; ; ; ; ; ; ;	H	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	O/Port Vision 2000 EIS No Project Alternative PM Peak Hour	000 EIS	S/EIR	1 1 1 1 1 1	1 1 1 1 1 1 1 2			FISCO, N	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	00 EIS/EIR native		1	!
1 ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Level of Service Computation Report perations Method (Future Volume Alt ************************************	ice Comp hod (Fut: *******	utatior ure Vol	n Repor lume Al	t ternat	. *		1994 ***********************************	Level Of Service 1994 HCM Operations Method ************************************		Computation Report (Future Volume Alternative) ************************************	native)	(1)	* * * * * * * * * * * * * * * * * * *
<pre>cycle (sec): Loss Time (sec): Optimal Cycle:</pre>	**************************************	100 11 (Y+R = 4 St	.*************************************	****** ical V age De l Of Se	**************************************	***** o. (X): cc/veh)	* 1	**************************************	Cycle (sec): Loss Time (sec): Optimal Cycle:	* *	Critical Critical = 4 sec) Average Level Of	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	*	0.417 19.2 C	**
**************************************	**************************************	R L -	South Bound	_ K	East Bound	Sound - R		West Bound	Approach: Movement:		South Bound L - T - R	East Bound L - T -	Id R L	West Bound	nd R
Control:	Protected Include		Protected Trollide	 	Split Phase Include	hase	split Split Inc	plit Phase Include	Control: Rights:	Protected Include	g Leg	Prot		rot	
kignes: Min. Green: Lanes:		20 0	20	0 0	2	1 0	10 1	20 20 1 1 0	Min. Green: Lanes:	10 20 20 1 0 1 1 0	10 20 20	0 10 20 1 0 2 0	20 0	0 20	0 0
Volume Module		<u> </u>	- - - -	<u>:</u>	-	!		}	Volume Module:		2 0 205	11 0 108	- 0	0 53	
	194	1.0			1.	i,	1.00 1.	31 34 00 1.00	d): Bee:	1.00 1.0	1.00	1.001	1	ri H	1.00
Initial Bse: Added Vol:	0 194 2	281 0 126 0	144 0	0 0	31 97	→	32 205	n	Added Vol:	. 0 1	0 18	258	0 0	000	00
PasserByVol:	0 7	0 0	0 7	0 6	0 0	0 0	0 23.7	31 34	PasserByVol: Initial Fut:	0 0 0 0 391 197 3	2 0 386	258 11		0 55	о н
Initial Fut: User Adj:	1.00	1.00	1.00		1.00 1.00		1.00				1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00
PHF Adj:	1.00 1.00 1.	1.00	1.00	1.00 1.	1.00 1.00 31 97	0 1.00 7 18	1.00 1.	00 1.00 31 34		197	0	258 114			н с
Reduct Vol:	0				•	0 0	0 7.5.0	0 0	Reduct Vol: Reduced Vol:	0 0 0 391 197 3	0 0 0 2 0 386	0 0 0 6 258 114	00	0 55	о гі
Reduced Vol: PCE Adj:	0 194 4 1.00 1.00 1.	1.00	1.00				1.00				1.00 1.00 1.00	1.00 1.00	1.00.1	00 1.00	1.00
MLF Adj: Final Vol.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.05 1.00 427 0	1.05	1.05 1. 32	1.05 1.05 33 102	5 1.05 2 19	1.00 1. 237	00 1.00 31 34	MLF AGJ: Final Vol.:		0	258 120			
of the Module	Module.		1 1 1 1 1 1	- -	1		·		Saturation Flo	Flow Module:	;		_		- 0
Sat/Lane:			1900	1900 19	1900 1900	0 1900	1900 1900	00 1900	Sat/Lane: Adjustment:	1900 1900 1900 0.95 1.00 1.00	1900 1900 1900 0.95 1.00 0.85	1900 1900 0.95 1.00			1.00
Adjustment: Lanes:	0.00 1.00 2	2.00 0.00	1.65				1.00		Lanes: Final Sat.:		1.00 0.00 2.00 1805 0 3230	1.00 2.00 1805 3800	0.00	0.00 1.97 0 3736	0.03 64
	0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	=		\doteq					Capacity Analysis Module:	ysis Module:	1	 	_		- ;
Vol/Sat:	0.00 0.10 0	.13	0.05	0.05 0.	0.04 0.04	4 0.04	1 0.13 0.02	02 0.02		0.22 0.06 0.06	0.00 0.00 0.13	0.14 0.03	0.00	0.00 0.02	0.02
<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.00 0.35	**** **** 0.35 0.00 0.38 0.00	0.35	0.35 0.0.14 0.	0.20 0.20 0.21 0.21	0 0.20	0.34	34 0.34 05 0.06		0.30 0.33 0.33 0.72 0.17 0.17	0.17 0.00 0.40 0.01 0.00 0.34	0.20 0.40 0.72 0.08	0.00	0.00 0.20	0.20
Texts Of Service Modile	rice Module:		1 1 1 1 1 1 1		1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	 revel Of Serv		!	-	-		
Delay/Veh:	i		0.0 14.5 1	14.5 21	21.6 21.6	6 21.6	6 16.2 14.1	1 14.2	Delay/Veh: User DelAdj:	23.3 15.2 15.2 1.00 1.00 1.00	22.4 0.0 13 1.00 1.00 1.	1.00 1.00		1.00 1.00	1.00
User DelAdj: 1.00 1.00 AdjDel/Veh: 0.0 15.4		16.0 0.0			21.6 21.6		16.2		AdjDel/Veh:	15.2	22.4 0.0 13.6 0 0 8	.6 28.9 12.1 8 7 2	0.0	0.0 21.0	21.0
Queue: ********	Queue: 0 4 9 0 3 I ***********************************	*******	3******	****	*****	*****	********	+ + + + + + + + + + + + + + + + + + + +	*	**************	*************	***	* * * * * * *	***	* * * *

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		FISCO,	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	on 2000 Alterna k Hour	O EIS/EI ative	e.					Eq.	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	t Vision 2000 oject Alternat PM Peak Hour	EIS/EIR ive			
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Level Of peration	vice chod	Computa (Future	Computation Report (Future Volume Alternative)	port Alter	native	*	1		Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative)	ol Of Service	Computated (Future	Service Computation Report ad Method (Future Volume Alter	native)	***************************************	***************************************
Intersection	Intersection #16 7th/1-880 SB Ramp	880 SB	Ramp	****	****	****	*	*	******	Intersection	Intersection #17 14th/I-880 Frontage Rd.	30 Frontage]	kd.	****	*****	*****	****
Cycle (sec):	100	£		Critica	Critical Vol./Cap.	Cap. ((x):		466	Average Delay (sec/veh)	Average Delay (sec/veh): 1.8 Worst Case Level Of Service:	1.8	MOM	Worst Case Level Of	Of Ser	Service:	
Optimal Cycle:	.e. 35	. + t /	o (1+K = 4 sec) Average Deray (sec/ven): Level Of Service:	Level C	of Service:	ce:	: (1110		n ma		North Bound	South	South Bound	East Bound		West Bound	punc
*********	**************************************	*****	**************************************	*****	* Uni	******** East Bound	* * * * *		**************************************	Movement:	I T	R L - '	T - R	H	R L	₽ ¦	- R
Movement:	- I	<u>-</u> د		α; ,	1	; [+	<u></u>		<u>م</u>	Control:	Uncontrolled	-	Uncontrolled	Stop Sign	=	Stop Sign	ign
Control:			Protected	ted	Pro	Protected		Pro	ted	rrgnes: Lanes:	0 0 1 1	0 1 0	2 0 0	0 0 0 0	0 1	0 0	1 0 1
Rights: Win Green:	Include	je Je	Include	ude	H C	Include	00	Inclu	Include					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	:		
Lanes:	0 0	0 0	0	0	0	0		٥	0	Base Vol:	0 62	≈**		0		0	7
-									-	Growth Adj: Initial Res.	1.00 1.00	1.00 1.00 1.00	00.1.00	1.00 1.00 1.	1.00 1.00	1.00 1.00	1.00
Base Vol:	0	0	0	0	0	0		378 0	0	Added Vol:	0 258	0 0 181					. 0
Growth Adj:	1.0		1.0	1.00	1.00 1.00		1.00 1.	.00 1.00	1.0	PasserByVol:	0	0					0
Initial Bse:		0			0		7			Initial Fut:		4		0		0	
Added Vol:	0 0	0 0	0 0	0 0	0 0	264	534	0 574	o c	User Adj:	1.00 1.00 1.	1.00 1.00 1.00	00 1 00	1.00 1.00 1.	1.00 1.00	00.1.0	1.00
Initial Fut:		0						57		PHF Volume:	320	4				•	
User Adj:	1.00 1.00	1.00	1.00 1.00	1.0	1.00		_	00	1.0	Reduct Vol:	0	0					0
PHF Adj:	1.0	1.00	1.0	1.0	1.00 1		1.00 1.	80	1.0	Final Vol.:	0 320	130 4 1	181 0	0	0 115	0	7
Reduct Vol) C	o c		- 0	- -	407	140	4/c 8/s		Aajustea volume Grade:	:arnbau aun	-	*	*0		0	
Reduced Vol:		0					541			% Cycle/Cars:	: xxxx xxxx	CCCC	XXXX	XXXX XXXX		xxxx	XXXX
PCE Adj:	1.00 1.00	1.00	1.00 1.00		1.00		1.00 1.	00		* Truck/Comb:	cx xxxx		0	cx xxxx		x xxxx	a
MLF Adj:	1.0	1.00	1.0	1.0	1.00		-	03 1	1.0	PCE Adj:	1.10 1.00	00 1.1	00 1.00		01		1.10
Final Vol.:	0 0	0 1	0 0	0 1	0	8/7	141	389 603	0	Cycl/Car FCE: Trck/Cab PCE:	XXXX XXXX	XXXX	XXXX	XXXX XXXX		× × × × × × × × × × × × × × × × × × ×	XXX
Saturation Flow Module	low Module:	=	_	-	_		=		-	Adj Vol.:	0 320	30		0	0 12		80
Sat/Lane:	1900 1900	1900	1900 1900		1900			00		Critical Gap	Gap Module:						1
Adjustment:	1.00 1.00	1.00	1.00 1.00		1.00	1.00 0	0.85 0.	.95 1.00	1.00	MoveUp Time:	MoveUp Time:xxxx xxxx xxxx		C XXXXXX X	2.1 XXXX XXXXX XXXXX XXXX XXXXX		3.4 xxxx	2. r 6. r
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A-AM.CMD	Tue Nov 5, 1996 13:15:10	1		Page 1-1	į	ADIC J /-3 A-AM.CMD
	FISCO/PORT Vision 2000 Els/Elk Maximum Marine/Maximum Rail Alternative AM Peak Hour	ve		!	;	FISCO/Port Vision 2000 BIS/BIR Maximum Marine/Maximum Rail Alternative AM Peak Hour
	Trip Generation Report Forecast for AM Peak Hour					Zone Rate Trips Trips Total % Of # Subzone Amount Units In Out In Out Trips Total
Zone # Subzone	Rate Rate Amount Units In Out	Trips T In C	Trips Out	Total * Trips To	% Of Total	Zone 28 Subtotal
1 New Harbor Zone 1 S	1018.00 Employees 0.26 0.05 Subtotal	265 265	51	316 316	5.1	TOTAL3361, 2811 6172 100.0
3 J.I.T. Zone 3 S	360.00 Employees 0.40 0.09 Subtotal	144	3 3	176 176	2.9	
6 Middle Harbr Zone 6 S	e Harbr 516.00 Employees 0.26 0.05 Zone 6 Subtotal	134	26 26	160	2 . 6 . 6	
7 7th St Harbr Zone 7 S	t Harbr 613.00 Employees 0.26 0.05 Zone 7 Subtotal	159 159	31	190	3.1	
8 Outer Harbor Zone 8 S	Harbor 706.00 Employees 0.26 0.05 Zone 8 Subtotal	184 184	3 3 5	219	3.5 3.5	
10 New Park Zone 10	1.00 Total Trips 15.00 15.00 Subtotal	15	15	30	0.5	
11 New Harbor Zone 11	1.00 Trucks Inter 248.00 264.00 Subtotal	248 248	264 264	512 512	8 8 .3	
16 Middle Harbr Zone 16	1.00 Trucks Inter 125.00 133.00 Subtotal	125	133	258 258	4 4 2 . 2	
17 7th St Harbr Zone 17	. 1.00 Trucks Inter 149.00 159.00 Subtotal	149 149	159 159	308 308	5.0 5.0	
18 Outer Harbor Zone 18	1.00 Trucks Inter 172.00 183.00 Subtotal	172	183	355 355	ი. ი. ი. ი.	
21 New Harbor Zone 21	1.00 Truck External 476.00 508.00 Subtotal	476	508	984 984	15.9 15.9	
23 J.I.T. Zone 23	1.00 Truck External 431.00 459.00 Subtotal	431	459 459	890	14.4 14.4	
26 Middle Harbr Zone 26	1.00 Truck External 241.00 257.00 Subtotal	241	257 257	498 498	8 .1 1.8	
27 7th St Harbr Zone 27	t Harbr 1.00 Truck External 287.00 306.00 Zone 27 Subtotal	287	306	593	9.6	
28 Outer Harbor	: 1.00 Truck External 331.00 352.00	331	352	683	11.1	
Traffix 6.8.0306	of (c) 1996 Dowling Assoc. Licensed to Dowling Assoc.,	Dowling	Assoc.	, Oakland	and	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision Maximum Marine/Maximum

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Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

A-AM.CMD

Volume Type

#244 Base Added Total

Page 4-5 Page 4-5	.1 Page 5-1	//EIR ernative		Future Del/	LOS Veh C B 8.5 0.267 + 2.149 D/V	. C 20.5 0.803 + 5.425 D/V	. C 17.5 0.897 + 4.837 D/V) B 14.6 0.770 + 2.773 D/V	F 72.1 0.660 +63.421 D/V	C 15.9 0.594 + 0.098 D/V	C 20.9 0.821 +20.851 D/V	C 16.6 0.526 + 4.653 D/V	; C 23.6 0.819 + 5.311 D/V	I C 17.6 0.392 + 1.186 D/V	; C 21.3 0.565 + 8.382 D/V	
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17 14th St./ I-880 Frontage Rd.

18 W.Grand Ave./ I-880 Frontage R C 19.9 0.237

### PESCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative	FISCO/Por um Marine vel Of Se rations M ********* (Y+R = 4 (Y+R = 4 (Y+R = 4 (Y-R = 4 (FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour Level Of Service Computation Report M Operations Method (Future Volume Alternat. ***********************************	Rail A. four	EIS/EIR Alternative	4 A	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	! !	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		SIA	CO/Por	FISCO/Port Vision	2000	EIS/EIR			
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Cycle (sec): 100 Loss Time (sec): 8 Optimal Cycle: 58 ************************************	(Y+R = '(Y+R =	******** Cri sec) Ave Lev ******* South Boun	* * * * *	on Reportion	ort Alterna	* *	1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1	1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	level Of Service level Of Service 1994 HCM Operations Method ************************************	Level Operat	Of Serions Me	Service Col	mputati uture V ******	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative) ***********************************	ernativ ******	(e) * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *
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	FISC Maximum M	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour	2000 EIS/ Rail Alte	EIR rnative		1			Махіп	FISCO/I	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna AM Peak Hour		EIS/EIR Alternative	1 1 1 1 0		
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of Service Computation Report Derations Method (Future Volume Alt ************************************	putation ture Volu	Report me Alter	native)		* *	<pre>Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************</pre>	Le 1994 HCM Ope ************************************	Level Of Se perations N ************************************	Level Of Service Computation Report Operations Method (Future Volume Alt ************************************	omputat Future ******	Computation Report (Future Volume Alternative) ************************************	ernativ ******	* *	* * * * * * * * * * * * * * * * * * * *
**************************************	######################################	**************************************	Critical Vol./Cap. Average Delay (sec/Level Of Service:	./Cap. (iy (sec/v vice:	(X): /veh):	0.897 17.5	*	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 100 8 (Y+	(Y+R =	Criti 4 sec) Avera Level	Critical Vol./ Average Delay Level Of Servi	Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	Cap. (X): (sec/veh): ce:	0.770 14.6 B	0 9 B
**************************************	**************************************	********* South Bound L - T -	* * * * * * * * * * * * * * * * * * *	******* East Bound	id R	* Xest	Bound F - R	Approach: Movement:	North Bound L - T -	nd R	South Bound L - T -		East Bound	und - R	West Bound	ound - R
Control: Rights:	rotected Include	Frot	<u> </u>	Protected Ovl	·	Protected Include	ed de	Control: Rights:	Protected Include		Protected Include	ed Je 20	Protected Include	ed ed de	Protected Ovl	red 20
Min. Green: Lanes:	10 20 0 2 0 2 0 0	0 0 70	1 2 1	0	, o <u>-</u>	° .) 	Lanes:	0	0	0 0	0 1 0	7 7	0	0 0	
Volume Module	e:		334 69	0	37	0	- o	Volume Module: Base Vol:	0 0 :0	- 0	0	- 0	0		0	- 45
Growth Adj:	-	1.00 1.00		1.00	1.00 1.	00 1.00	1.00	Growth Adj: Initial Bse:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00 0	1.00
Added Vol:	910 337	0 383	.,	00	829	00	00	Added Vol: PasserByVol:	00	00	625 0 0 0	586	533 306	00	0 367	715
Initial Fut:	1069 337	0 383			866	0 6	c	Initial Fut:	0 0 0	0 6	625 0	586	533 306	1.00	0 367	769
User Adj: PHF Adj:	1.00 1.0	1.00 1.00		1.00	1.00 1.	00 1.00	1.00	PHF Adj:	• 14		1.00 1.00		1.00 1.00	1.00		
PHF Volume: Reduct Vol:	1069 337 0 0 0 0	0 0	0 0	0 0	000			Reduct Vol:		00						
Reduced Vol: PCE Adj:	1069 337 0 1.00 1.00 1.00	0 383	605 300 1.00 1.00	0 01.00	866 1.00 1.	0 0 0	1.00	Reduced Vol: PCE Adj:			М			1.00		
MLF Adj: Final Vol.:	1.05 354	1.00 1.05 0 402		1.00	1.00 1. 866	00 1.00	1.00	MLF Adj: Final Vol.:	1.00 1.00	00.1	1.03 1.00 644 0	1.00 586	1.03 1.05 549 322	0.1	1.00 1.00 0 367	1.05 807
Saturation Flow Module:	low Module:					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	! :	Saturation Flow Module	low Module:	=	• 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Sat/Lane:	1900 1900 1900	1900 1900	1900 1900	1900	1900 19	1900 1900	1900	Sat/Lane: Adjustment:	1900 1900	1900	1900 1900 0.95 1.00	1900	1900 1900 0.95 1.00	1900	1900 1900 1.00	1900
Adjustment: Lanes: Final Saf .	2.00 2.00 0.00	0.00 2.00		00.0		800	00.0	Lanes: Final Sat.:					2.00 2.00 3610 3800	0.00	0.00 1.00 0 1900	3230
Capacity Ana	: 4	1	_	-	_		- :	Capacity Analysis								300
Vol/Sat: Crit Moves:		0.00 0.11		0.00			00.0	Crit Moves:								
Green/Cycle: Volume/Cap:	0.35 0.66 0.00 0.88 0.14 0.00	0.00 0.31	0.57 0.26 0.65 0.33	0.00	0.61 0. 0.88 0.	00.00.00	0.00	Green/Cycle: Volume/Cap:	0.00 00.00	00.00	0.38 0.00	0.77	0.77 0.19	00.00		:
Level Of Ser	Service Module: 25.3 4.2 0.0	0.0 17.2	10.5 19.3	0.0	17.4 0	0.0 0.0	0.0	Level Of Service Module: Delay/Veh: 0.0 0.0	vice Module:	0.0	11.1 0.0	_	28.1 10.7	0.0	0.0 24.2	
User DelAdj: 1.00 1.00	П	1.00 1.00		1.00		00	1.00	User DelAdj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00 28.1 10.7	1.00	0.0 1.00	3.3
AdjDel/Veh: Oueue:	25.3 4.2 0.0 31 4 0	0.0 17.2	10.5 19.3	0.0	17.4 0 23		0.0	Adjuet/ven: Queue:							1	
***	****	****	****	*****	* * * * * * *	*****	***	****	****	* * * * * * * * * * * * * * * * * * * *	***	* * * * * *	* * * * * * * * * *	* * * *	***	* * * * * *

	FIE	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna AM Peak Hour	t Vision 2000 /Maximum Rail AM Peak Hour	0 EIS/EIR 1 Alternative	tive				Мах:	FISCO/ imum Mar	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail AM Peak Hour		EIS/EIR Alternative	1 1 1	1 1 1 1	
1 ************************************	Level Of Service Computation Report 1994 HCM Operation Method (Future Volume Alternative) ***********************************	Level Of Service Computation Report perations Method (Future Volume Alt. ************************************	Compute (Future	Computation Report (Future Volume Alternative)	ort Alternat ******	. *		Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	1994 HCM OP	Level Of perations ************************************	Level Of Service Computation Report Operations Method (Future Volume Alt ************************************	mputati uture V ******	Computation Report (Future Volume Alternative)	rnative	* *	***************************************
Cycle (sec): Loss Time (sec): Optimal Cycle:	**************************************	**************************************	****** Critica Averaga Level (Critical Vol./Cap. (X): Average Delay (sec/veh): Level Of Service:	ap. (X) sec/veh) e:		0.660 72.1 F	Cycle (sec): Loss Time (sec) Optimal Cycle:	ec): 8 (Y+e: 58	0 Y+R = 8 (Y+R = 8	Critical Vol./Cap. (X) 4 sec) Average Delay (sec/veh Level Of Service:	Critical Vol./ Average Delay Level Of Servi	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service: ************************************	(X): /veh):	**************************************	0.594 15.9 C
**************************************	**************************************	South Bound	Bound	East	East Bound		Bound T R	Approach: Movement:	North Bound	ound - R	South Bound L - T -	nd R	East Bound	ind R	West Bound	Sound - R
Control:	Split Phase Include	Split Phase Include	it Phase Include	 Split In	Split Phase Include	- Split In	Split Phase Include	Control: Rights:	 Protected Include	1	rote	l .	rot	•	L 2	
Min. Green: Lanes:		20 10 20 0 0 1 0	20 20 0 1 0	10	20 20 0 1 0	10	20 20 0 1 0	Min. Green: Lanes:	10 0	0 10	0 0 0	0 -	0 20	1 0	10 20	0 1
Volume Module			1	-	! ! !		! !	dul					c		c	-
	8 0 0 0	31 26 0	0 26	8 00 1	6 29	1.00	59 56 1.00 1.00	Base Vol: Growth Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00		1.0	1.0
0	00.1			00		50		Initial Bse:	9 0		00	00	0 0 0	о r	0 0	0 0
Added Vol:	0 778	0 0 1020	0 0	0 0	0 0	0 0	000	Added VOI: PasserByVol:	ì °			0		. 0		
rasserbyvor: Initial Fut:	778	7	73	- αο		20			17		0 0				•	3 .
	1.00	1.00		1.00 1	00 1.00	1.00.1	00.1.00	User Adj: pur Adi:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	
PHF Adj:	1.00 1.00 1.00 8 778 31	31 26 1020	20 T.00	1 8		205		PHF Volume:	•				0 508	m	361 593	E 6
Reduct Vol:	0	0				0		Reduct Vol:	0 0	0 (00	0 0	0 0	o ~	361 593	0 ~
Reduced Vol:	778	50			6 29	200	1 00 1 00	Reduced Vol: PCE Adi:	1.0	-	1.0		٦			
PCE Adj:	1.00 1.00 1.	1.00 1.00 1.00	1.05	1.00		1.05		_			7		1.00 1.05		1.00 1.05	5 1.05
Final Vol.:		27		60		53		Final Vol.:	17 0	332	0 0	0	0 533	4	361 622	2
							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Saturation Flow Module	low Module	-				-		
Saturation Flow Module		0061 0061 0061	1900	1900	1900 1900	1900	1900 1900		1900 1900							
Adjustment:		1.00		0.97		0.94			0.95 1.00		1.00 1.00		1.00 1.00		0.95 1.00	0 1.00
Lanes:	1.90	0.05		0.57		0.61	0.71 0.68	Lanes:	1805 0.00	1615	00.0	200	0 3772	7 28		
Final Sat.:	35 3582	145 91 3618	18 AT	1053	CTOT OG/				-	- ;			;		-	1 1 1 1 1
Capacity Ana	Capacity Analysis Module:	=							lysis Modu	lle:	0	0	4.	4.	31.0.00.0	6 0.16
Vol/Sat:	0.23 0.23 0.	0.23 0.30 0.30	30 0.30	0.01	0.01 0.02	0.05	0.05 0.05	Crit Moves:	00.0 T0.0							
Crit Moves:	100	0 21 0 27 0 27	27 0.27	0.20	0.20 0.20	0.20	0.20 0.20						0.2	4	34	0.5
Volume/Cap:	1.09 1.09	1.09		0.04		0.24	0		0.03 0.00	0.59	0.00 00.00	0.00	0.00 0.59	0.59	0.59 0.2	9 0.29
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								Tevel Of Service Module	vice Modul		1 1 1 1 1 1 1					
Level Of Service Module:	vice Module: RO 6 RO 6 RO	80.6 75.4 75.4	.4 75.4	20.8	20.8 21.1	21.8	21.8 21.8		14.0 0.0		0.0 0.0		0.0 22.6			
User DelAdi:	1.00 1.00	1.00		1.00		1.00			1.00 1		-				1.00 1.00	1.00
AdjDel/Veh:	9.08 9.08	75.4 75	.4 75.4	4 20.8 20.8	0.8 21.1	21.8	21.8 21.8	-	14.0 0.0	7.81	0.0))	0.0 62.6	9.77	, 6.01	
Onene:	1 38	,	649	٥	0	-	7	Onene:	,	•	>	•	1	•	•	

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The property of the property	A-AM.CMD	Tue Nov 5, 1996	1996 13:15:11		Page 12	-1	A-AM.CMD		Tue Nov	7 5, 1996	13:15:1	11	i ; ;	Page	13-1
100 100	FIS	CO/Port Vision 2 Marine/Maximum R AM Peak Ho	000 EIS/EIR ail Alternative ur	1 1 1 1 1 1 1	1 1 1 1 1			FI	SCO/Por Marine	Vision /Maximum AM Peak H		S/EIR ternative			
100 100	1994 HCM Operat ************************************	Of Service Compions Method (Fut	utation Report ure Volume Alte		#	1	1 Intersection	Leve 994 HCM Opera ************************************	1 Of Se tions M *******	rvice Com sthod (Fu *********	putation ture Vo ****** ./ I-88	n Report lume Alte ********* 0 Ramps	rnativ	_ * *	* * * * * * * * *
	**************************************	.************** Crit R = 4 sec) Aver Leve	**************************************	* *	0.821 20.9 C		Cycle (sec): Loss Time (se Optimal Cycle	100 100 (Y	1 H	Cri sec) Ave Lev	tical V rage De el Of S	ol./Cap. lay (sec/ ervice:	(X): veh):	0.0	526 6.6 C
Protected	**************************************	**************************************	*********** East Bou R L - T -	* '	****** est Boun - T -	nd *** R	Approach: Movement:	*	-	outh Boun		East Bou	ind R		Bound - R
10 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0			 Protecte Includ	<u>-</u>	rotected		Control: Rights:	1	<u>:</u>			Protecte Includ	1	. н	
10	10 0 0	0000	0 0 20	0 0 1	7 70	۰ ،	Min. Green: Lanes:	10 20 0 0 1		0 0	20 1	0 10			႕
1.00 1.00	\ dule:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		=	! !	_ (Volume Module		=	r	=		438		. 0
1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	Η.	1.0	. 00.1	Growth Adj:	1.00 1		1.00	8 :	00 1.00		1.00 1.0	-
Intial Pure Parametery Parameter P	0 0 :		00		-	0 0	Initial Bse: Added Vol:					Ž,	4 8 3 4 8 3		
100 1.00 1	0	0	0 (•		0 0	PasserByVol:						921		
1.00 1.00	ut: 332 0 1.00.1.00	1.00 1.00	0 1.00	° ∺	1.00	1.00	User Adj:	1.00		1.00					ч.
100 100	1.00 1.00	1.00 1.00	1.00	9		00.1	PHF Adj: PHF Volume:	33	-	7.00				82 30	-
332	0	0		,	•	0 0	Reduct Vol:						921		
1.00 1.00	332 0	1.00 1.00		<u>.</u>	1.00	1.00	PCE Adj:	1.00		1.00		00 1.00			
Saturation Flow Module:	1.00 1.00	1.00 1.00		٠. ف	i.	1.00	MLF Adj: Final Vol.:			0 1.00 6 28			1.05		-
Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 19					: : : : : : : : : : : : : : : : : : : :										
Adjustment: 0.95 1.00 0.85 1.00 1.00 1.00 1.00 0.85 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0		1900 1900	1900	19	1900	1900	Saturation F] Sat/Lane:			1900			1900		
Final Sat: 3610 576 1134 1805 645 1084 1805 1900 3230 1805 3694	1 00 0 00	0.00 0.00	1.00			0.00	Adjustment: Lanes:	0.34		0.37		00 1.00	2.00		
Capacity Analysis Module: Vol/Sat: 0.09 0.06 0.01 0.04 0.03 0.21 0.30 0.05 0.09 **** **** **** **** **** **** ****	1805 0	0		18		0		576	_	645		us ¦	3230		-
Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Crit Moves: **** Green/Cycle: 0.13 0.22 0.22 0.11 0.20 0.20 0.19 0.47 0.47 0.10 0.38 0.22 0.22 0.11 0.20 0.20 0.19 0.47 0.40 0.45 0.23 0.14 0.44 0.64 0.45 0.23 0.23 0.14 0.44 0.64 0.45 0.23 0.23 0.14 0.44 0.64 0.45 0.23 0.23 0.14 0.44 0.64 0.45 0.23 0.23 0.14 0.44 0.64 0.45 0.23 0.23 0.14 0.44 0.64 0.45 0.23 0.23 0.14 0.44 0.64 0.45 0.23 0.23 0.14 0.44 0.64 0.45 0.23 0.23 0.23 0.23 0.23 0.23 0.23 0.23	Capacity Analysis Module:		_	- 0	00.00	00.0	Capacity Ana: Vol/Sat:	Module: 0.06 0	- °	0.04	:	0	0.30	050.	
0.22 0.00 0.65 0.00 0.00 0.00 0.00 0.01 0.82 0.82 0.00 0.00 0.00 0.00 0.00 0.00	0 * * * * * * * * * * * * * * * * * * *			*			Crit Moves:		•	* 0		6	* * *	* C	
6.0 0.0 0.0 0.0 17.1 30.1 21.4 3.0 0.0 User Delay/Veh: 28.6 20.8 25.8 21.7 21.7 21.8 11.6 13.6 28.7 13.7 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	0.22 0.00 0.82 0.00	0.00 0.00	0.00		0.70	00.0	Green/Cycle: Volume/Cap:	0.26		0.22	_	0 :	0.64	.45	:
32.6 0.0 6.0 0.0 0.0 0.0 0.0 17.1 30.1 21.4 3.0 0.0 Dolay/ven: 28.6 20.8 20.8 20.0 25.0 21.7 21.7 21.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Level Of Service Module:			<u>:</u>	!	-	Level Of Ser	i)	_		_		7 7 61		
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	32.6 0.0	0.0 0.0		5 -	-	0.0	Delay/Veh: User DelAdi:		7 11	1.00		00 1.00	1.00	1.00 1.0	
10 0 7 0 0 0 0 0 11 17 0 0 Queue: 8 1 2 0 1 1 7 21 2 6	32.6 0.0	0.0 0.0		5	ŧ	0.0	AdjDel/Veh:			21.7		.8 11.6	13.6	28.7 13.	
****************	10 0	0 0	0			0	Onene:	₽	7	0 1	1	1 7	21	7	9

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	FISCO, Maximum Ma:	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail AM Peak Hour	n 2000 m Rail Hour	EIS/EIR Alternative	ive				Maxin	FISCO/Port	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail AM Peak Hour	m Rail Hour	EIS/EIR Alternative	.ve		1 1 1 1 4 1
19 ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	omputa Future *****	Computation Report (Future Volume Alternative	rt ternat *****	:ive) *********	***	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level 1994 HCM Operat: ************************************	Level Of S perations *********	Level Of Service Computation Report Operations Method (Future Volume Alt	omputat Future *****	Computation Report (Future Volume Alternative) ************************************	t ternati *****	ve) ******	* * * *
Cycle (sec):	Cycle (sec): 100	* * * * * * * * * * * * * * * * * * *	***** ritica	<pre>critical Vol./Cap. (X): average Delay (sec/veh)</pre>	p. (X):	0.819	* * * *	**************************************	100	***** (Y+R =	* * * * * * * * * * * * * * * * * * *	****** ritica Verage	<pre>critical Vol./Cap. Average Delay (sec</pre>	(X):	**************************************	* * * * * * * * * * * * * * * * * * *
Optimal Cycle:): 12 82 *******	G ())) *********************************	evel 0	Average Deray (5c Level Of Service: ************************************	***************************************	***	* * * * *		* * *	; ;	*	Level 0	Level Of Service:	* * * * * * *	**************************************	
Approach: Movement:	North Bound L - T - R	South Bound L - T -	und - R	East Bound L - T -	Bound - R	ы	ound - R	Approach: Movement:	North Bound L - T -	ind R	South Bound L - T -	und - R	East Bound L - T -	lound - R	West B	Bound T - R
Control: Rights:	Protected Ovl	Protected Include	1		it Phase Include	Split Split	lase ide	Control: Rights:	rot		rot		ää	hase ude	ii.	hase ude
Min. Green: Lanes:	10 20 20 1 0 1 1 0	10 20	1 0 .	10 10 1 1 0 .	1 0	10 20 1 0 0	1 20	Min. Green: Lanes:	0 20	1 20	0 20	1 0 1	10 20 0 1 0	1 0 7	10 20	1 0 70
Volume Module:			!	t t i i	! ! !		1	Volume Module	- 0) 	— ! ! !	 			
Base Vol:	0 0 0	72 109	1.00	256 51	1 0	0 169	364	Base Vol: Growth Adi:	0 175	1.00	0 154	31	24 43 1.00 1.00	13	205 31 1.00 1.00	115
٠			165	256 51	į	0 5		Initial Bse:		45		31	24 43		205 31	
Added Vol: PasserByVol:	195 150 433 0 0 0	0 0	0			#0.0 0		PasserByvol:		0		0				
ıt:	150	72 312	165	256 51		554		Initial Fut:		309	0 154	31	24 43	13	400 31	
User Adj: 1 PHF Adi: 1	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	0 1.00	1.00 1.00	1.00	User Adj: PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00		1.00 1.00	1.00
	150	72 312	165	LG.		554		PHF Volume:	0 175	309	0 154	31	24 43	13	400 31	115
Reduct Vol: Reduced Vol:	0 0 0 195 150 433	72 312	165	256 51	1 264	554	182	Reduced Vol:	0 175	309	15	31	4	п	m	
		1.00 1.00	1.00			1.00		PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00
MLF Adj: 1 Final Vol.:	1.00 1.00 1.00 195 150 433	1.00 1.05	1.05	282 56	0 1.10 6 290	554 177	191	Final Vol.:		340	0 162	33	4	•		
								Saturation Flow Module	 OW Modii]P	=	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	!				
Sat/Lane: 1900 1900		1900 1900	1900	1900 1900		1900		Sat/Lane:	1900 1900	1900		1900				
Adjustment: 0	0.95 1.00 0.85	0.95 0.95	0.95	1 67 0.33	3 1.00	0.95 0.92	0.92	Adjustment: Lanes:	1.00 0.90	0.90	1.00 0.97	0.97	0.96 0.96	0.96	1.00 1.00	0.85
Sat.:	1900	1805 2361	1249	2890 574		1805	1815	Final Sat.:		3272		624				:
 Anal	ysis Module:					7 0 31 0 11		Capacity Analysis	lysis Module	:: 0.10	0.00.05	0.05	0.02 0.02	0.02	0.22 0.02	0.07
Crit Moves: *				2		* *	i i	Crit Moves:	*							
Green/Cycle: 0 Volume/Cap: 0	0.12 0.22 0.58 0.86 0.35 0.46	0.10 0.20 0.40 0.69	0.20	0.20 0.20 0.49	0 0.20	0 0.36 0.36 4 0.86 0.30	0.36	Green/Cycle: Volume/Cap:	0.00 0.22	0.22	0.00 0.22	0.22	0.20 0.20	0.20	0.47 0.47	0.47
$\overline{}$	Modified Modified			-				Level Of Service Module	vice Module				-		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Delay/Veh: 4	46.7 21.1 8.0	28.0 26.0	26.0	23.2 23.2		27.7		Delay/Veh:	0.0 22.2	22.2	0.0 20.8	20.8	21.2 21.2			
User DelAdj: 1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	0 1.00	0 1.00 1.00	1.00	User DelAdj: AdiDel/Veh:	0.0 1.00	1.00	1.00 1.00	1.00 20.8	1.00 1.00	1.00	1.00 1.00	1.00
	4.	6 2 7		7		16	4	Queue:	0 5	60	0	н				
****	****	*******	****	*******	* * * * *	******	***	***	****	* * * * *	***	* * * * *	***	****	***	* * * * * *

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PASSON/POST VARIANDE PARTICIPATOR NATIONAL PROPERTY (1940) OF 150 PARTICIPATOR NATIONAL PROPERTY (1940) OF 15	### Maximum Marine/Maximum Rail Alternative Maximum Marine/Maximum Rail Alternative	! ; *	FISCO/I		
1.0 1.0	Level Of Service Computation Report 15 7th St. / I 880 NB Ramps / Frontage Rd. 100 10 (Y+R = 4 sec) Average Delay (sec/veh): 100 10 (Y+R = 4 sec) Average Delay (sec/veh): 100 10 (Y+R = 4 sec) Average Delay (sec/veh): 100 10 (Y+R = 4 sec) Average Delay (sec/veh): 100 10 (Y+R = 4 sec) Average Delay (sec/veh): 100 100 100 100 100 100 100 1	*			
1 10 17 18 14 18 18 18 18 18 18	10 (7.R = 4 sec) Average Delay (X): 10 (7.R = 4 sec) Average Delay (Sec/veh): 70		Level Of 1994 HCM Operation ************************************	Service Computation Report s Method (Future Volume Alter ************************************	ve)
North Bound South Bound	North Bound South Bound East Bound L - T - R L - T - R L - T - R Include n: 10 20 20 10 20 20 10 20 20	*	.*************************************	**************************************	**************************************
Procected Proc	Protected Prot	* ⊷	* * *	South Bound East Boun L - T - R L - T -	П
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10 10 10 10 10 10 10 10	e: 0 548 21 17 0 94 0 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	.00 1.00 1.00 1.00 1.00	1.00 1.00 1.0
1.00 1.00	1: 707 548 21 17 0 448 313 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 16 0 0 62	e: 0 0	0 0 0 0 0 18	0 65 U U 614 0 1082 0
17	1.00	0 0 0 0 0 0 0	0 0 :	0 0 0 0	0
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1900 1900	1900 1900 1900 1900 1900 1900 1900 1900	0 507 313 22 0 0 86	0 0 0 :	0 0 0 333	-
1900 1900	1900 1900 1900 1900 1900 1900 1900 1900			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
t: 0.95 0.99 0.99 0.95 1.00 0.08 0.08 0.00 0.00 0.00 0.00 0.00	t: 0.95 0.99 0.99 0.95 1.00 0.85 0.95 1.00 1.00 1.00 2.00 0.09 0.95 1.00 0.08 0.95 1.00 1.00 1.00 1.00 2.00 0.09 0.95 1.00 0.00 0.00 0.00 0.00 0.96 1.00 0.09 0.95 1.00 0.00 0.00 0.00 0.00 0.00 0.90 0.90	0061 0061 0061 0061 0061	1900 1900 1900	1900 1900 1900 1900	0061 0061 0061 006
Second S	2.00 0.96 0.04 1.00 0.00 2.00 1.00 2.00 0.00 0.00 3610 1812 69 1805 0 3230 1805 3800 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 0.85 0.95 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00	0.95 1.00
Selo 1812 69 1805 0 3230 1805 3800 0 0 3756 44 Final Sat: 0 0 0 0 0 0 0 3800 1615 Final Sat: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3610 1812 69 1805 0 3230 1805 3800 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 2.00 1.00 2.00 0.00 0.00 1.98	0.00 0.00 0.00	0.00 0.00 0.00 2.00	2.00
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0.20 0.30 0.01 0.00 0.16 0.17 0.01 0.00 0.02 0.02 0.02 Vol/Sat: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.20 0.30 0.30 0.01 0.00 0.16 0.17 0.01 0.00 0.00 0.28 0.38 0.38 0.10 0.00 0.42 0.22 0.42 0.00 0.00 0.72 0.79 0.79 0.09 0.00 0.37 0.79 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.0		Module:	=	
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0.72 0.75 0.75 0.75 0.00 0.00 0.00 0.00 0.10 0.10 0.10 0.45 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.7	0.72 0.79 0.79 0.09 0.00 0.37 0.79 0.01 0.00 0.00 0.70 0.70 0.01 0.00 0.00	**** **** *** *** *** *** *** *** ***	0.00 0.00 0.00	0.00 0.00 0.00 0.00	.85 0.10 0.95 0.00
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Level Of Service Module: 22.0 26.4 0.0 13.0 31.1 11.0 0.0 0.0 21.2 21.2 Delay/Veh: 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	22 0 26 4 0 0 13 0 31 1 11 0 0 0 0 0 0				
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22.6 22.0 22.0 26.4 0.0 13.0 31.1 11.0 0.0 0.0 21.2 21.2 AdjDel/Veh: 0.0 0.0 0.0 0.0 0.0 0.0 0.8 1.3	1 00 1 00 1 00 1 00 1 00 1 00 1 00 1 00 1 00 1 00 1	1.00 1.00 1.00 1.00 1.00	1.00 1.00 1	1.00 1.00 1.00	1.00 1.00 1
	22.6 22.0 22.0 26.4 0.0 13.0 31.1 11.0 0.0 0.0	13.0 31.1 11.0 0.0 0.0 21.2	0.0 0.0	0.0 0.0 0.0	1.3 26.7 0.1 0.0
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1.00 1.00	A-AM.CMD Tue Nov	Tue Nov 5, 1996 13:15:11 FISCO/Port Vision 2000 BIS/BIR	Page 18-1	A-AM.CMD	FISC	Tue Nov 5, 1996 13:1	. 13:15:11 2000 EIS/EIR Rail Alternative	1	
	Maximum Marine, 1	/Maximum Rail Alternative AM Peak Hour			Maximum Maximum M		- i		
Section Sect	Level Of Se: 1994 HCM Unsignalized I ************************************	rvice Computation Report Method (Future Volume Alternati ************************************	ive) ********	1 ************************************	Level 994 HCM Operati ************************************	Of Service Compons Method (Fut	utation Report ure Volume Alter ************************************	<pre>cnative) k******* k***************************</pre>	
North Bound Optimal Optimal North Bound South Bound Rest Bound North Bound South Bound	**************************************	**************************************	Service:	Cycle (sec):	100	Crit	ical Vol./Cap.	(X):	0.457
Thirties The controlled Stock State The controlled Thirties Thirt	**************************************	**************************************	West Bound	Optimal Cycle	81		of Service:	****	2
Decontrolled Tracitude Tra		. T . B L . T .	. I	Approach:	North Bound		East Bour		West Bound
10 1 0 2 0 0 0 0 0 0 0 0		st		Movement:	F .		ж г	<u>-</u>	
Mill Order Mil	0 1 1 0	2 0 0 0 0 0 0	0 0 0	Control: Rights:	Split Fnase Include			6	Include
1.00 1.00	= ;		c	Min. Green:	10 20 0 1 1	10 20	10 20	0 0	20 1 1
100 100	1.00 1.00 1.00	1.00 1.00 1.00	7						1
	0 0 89	354 0 0 0		Base Vol:	0 6	678 48	65 234		152
100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 0 0	0 0 0	0	Growth Adj:	1.00	1.00 1.00	1.00 1.00		1.00 1
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 313 89	0 0 0	0 0	Initial Bse: Added Vol:	164	0 0	, , ,		8 2
11 12 13 15 15 15 15 15 15 15	1.00 1.00 1.00	1.00 1.00 1.00	1.00.1	PasserByVol:	0	0	0		0
10	0 313 89	0 0 0	0 (Initial Fut:	9 164	678 243	65 299		234
Sequety Vol. Sequ	0 0 0	354 0 0 0		USEL AUJ: PHF Adj:	1.00	1.00 1.00 1	1.00 1.00		1.00
Column C	o V	מי מי מי מי מי מי מי מי מי מי מי מי מי מ		PHF Volume:	164	678	65		234
NEW COLUMN COLUMN			0	Reduct Vol:	164	0 678	9		234
Number N	XXXX XXXX	XXXX		PCE Adj:	1.00	1.00 1.00	1.00 1.00		1.00
Saturation 19 17 15 712 243 5 712 243 243 24	XXXX XXXX	1.10 1.10 1.1	10 1.10	MLF Adj:	1.05	1.05 1.00	1.00 1.05		1.10
Saturation Flow Module: Saturation Flow	xxxx xxxx			Final Vol.:	ì	712	- ;	<u>.</u>	/67
2.1 xxxx xxxxx xxxxx xxxxx xxxx xxxx xxx	XXXX XXXX	XXXX XXXX CXXX	ž	Saturation F	ow Module:		<u>.</u>		
2.1 xxxx xxxxx xxxxx xxxxx xxxxx xxxx	}	•		Sat/Lane:	1900	1900 1900	1900 1900		1900
5.5 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx		.1 xxxx xxxxx xxxxx xxxx	3.4 xxxx	Adjustment:	0.93	2 00 0 98	1.00 1.92		1.03
402 xxxx xxxx xxxx xxxx xxxx xxxx xxxx x		.5 XXXX XXXXX XXXXX XXXXX		Final Sat.:	1848	3610 1854	1805 3612	- :	1756
402 xxxx xxxxx xxxxx xxxxx xxxxx 1095 xxxx 1095 xxxx 1095 xxxx 1095 xxxx xxxx xxxxx xxxx xxxxx xxxxx xxxx xxxx		- -							1 1 1 1 1 1 1 1 1
Crit Moves:	•	XXXX XXXX	XXX	Vol/Sat:	0.09	0.20 0.13	0.04		0.15
	XXXX XXXX XXXX	XXXX XXXXX XXXX	0.97 xxxx	Crit Moves:	* * *	* * *	* * *		* (
	XXXX XXXX XXXX	XXXX XXXXX XXXX	344 xxxx	Green/Cycle:	0.20	0.34 0.34	0.10		2.7.0 2.2.0
3.6 xxxx xxxxx xxxxx xxxxx xxxx xxxx x 17.6 xxxx 3.3 Level Of Service Module: A * * * * C * A Delay/Veh: 20.8 23.2 23.2 18.0 16.3 16.3 27.7 20.9 20.9 37.0 21.7 21.7 21.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Volume/Cap:	0.47	0.58 0.39		=	
A * * * * * C * A Delay/Veh: 20.8 23.2 23.2 18.0 16.3 1b.3 2// 20.9 20.9 20.9 5// 20.7 20.7 20.7 20.7 20.7 20.7 20.7 20.7		XXXX XXXX XXXX XXXX XXXX 9"	17.6 xxxx	Level Of Ser	rice Module:	· ·	7		,
LT - LIK - KI Adjoel/Veh: 20.8 23.2 23.2 18.0 16.3 16.3 27.7 20.9 20.9 37.0 21.7 xxxx xxxx xxxx xxxx xxxx xxxx xxxx x		* * * * *	י • י טוָ	Delay/Veh:	23.2	1 00 1 00	1.00		1.00
xxxx xxxx xxxx Queue: 0 4 4 17 5 0 2 7 0 5 6 xxxx xxxx xxxx xxxx		- RT	LT - LTR	User DeiAdj: AdiDel/Veh:	23.2	18.0 16.3	27.7		21.7
* * * * * * * * * * * * * * * * * * *	p.: xxxx xxxx xxxxx xx	DOX XXXXX XXXXX XXXXX XXXXX XXXXX	XXXXX XXXXX	Onene:	4	17 5		0	5 6 1
0.0 0.3 0.0 0.3 0.0 17.0 8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	S: * * * *	* * *	*	****	****	****	****	*****	***
Assoc., Oakland			17.0						
	K A.0306 (c) 1996 Dowl	ling Assoc. Licensed to Dowling		Traffix 6.	8.0306 (c) 1996	Dowling Assoc.	Licensed to Dov	vling Ass	oc., Oakland

A-PM.CMD	Tue Nov 5, 1	5, 1996 10:49:50			Page 1-1	-1		į	ı			,	4
	FISCO/Port Vision 2000	ion 2000 EIS/EIR			! ! ! !	} ! ! !	A-PM.CMD	Non aut	5, 1996 10:49:50		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Page 1-2	72
	Maximum Marine/Maximum Rail PM Peak Hour	/Maximum Rail Alternative PM Peak Hour	ive			; ; ;		FISCO/Port Vision 2000 Maximum Marine/Maximum Rail PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR um Marine/Maximum Rail Alternative PM Peak Hour	rr native			
	Trip Genera	Trip Generation Report							-				1 1 1 1
	Forecast for	r PM Peak Hour					zone # Subzone	Amount Units	Rate Rate In Out	Trips In	s Trips Out	Total Trips	% Of Total
Zone # Subzone	Amount Units	Rate Rate In Out	Trips	Trips Out	Total Trips	% Of Total	Zone	28 Subtotal		271	325	596	10.9
1 New Harbor Zone 1	1018.00 Employees Subtotal	0.06 0.22	61 61	224	285 285	5. 5. 5. 5.	TOTAL			2257	7 3208	5465 100.0	100.0
3 J.I.T. Zone 3	360.00 Employees Subtotal	0.10 0.36	36	130	166 166	3.0							
6 Middle Harbr Zone 6	Middle Harbr 516.00 Employees Zone 6 Subtotal	0.06 0.22	31	114	145 145	2.7							
7 7th St Harbr Zone 7	t Harbr 613.00 Employees Zone 7 Subtotal	0.06 0.22	37	135 135	172	3.1							
8 Outer Harbor Zone 8 3	r 706.00 Employees Subtotal	0.06 0.21	4 4 2 2 2 4 4 2 5 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	148 148	190	3.5 3.5							
10 New Park Zone 10	1.00 Total Trips 0 Subtotal	33.00 40.00	33	4 4 0 4	73	1.3							
11 New Harbor Zone 11	1.00 Trucks Inter 1 Subtotal	203.00 243.00	203	243 243	446 446	8 8 2 2							
16 Middle Harbr Zone 16	r 1.00 Trucks Inter 5 Subtotal	103.00 123.00	103	123 123	226 226	4.1							
17 7th St Harbr Zone 17	r 1.00 Trucks Inter 7 Subtotal	122.00 147.00	122	147	269	4.9							
18 Outer Harbor Zone 18	r 1.00 Trucks Inter 3 Subtotal	141.00 169.00	141	169	310	5.7							
21 New Harbor Zone 21	1.00 Truck External Subtotal	1 391.00 468.00	391 391	468 468	859 859	15.7 15.7							
23 J.I.T. Zone 23	1.00 Truck External Subtotal	1 353.00 423.00	353 353	423 423	776 776	14.2 14.2							
26 Middle Harbr Zone 26	1.00 Truck External 198.00 237.00 Subtotal	11 198.00 237.00	198 198	237	435 435	8.0 0.8							
27 7th St Harbr Zone 27	1.00 Truck External	1 235.00 282.00	235	282	517	დ დ ც. გ.			·				
28 Outer Harbor	: 1.00 Truck External	1 271.00 325.00	271	325	596	10.9							
Traffix 6.8.030	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc.,	soc. Licensed to I	Dowling	Assoc	., Oakland	and	Traffix 6.8.03	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	Assoc. Licensed to	o Dowlin	g Assoc	., Oakla	pug

3-1	; ; ; ;	1 5 1 1 1	Westbound Total Left Thru Right Volume	754 816 1570	1061 1241 2302	408 2599 3007	31 1 2795 1 2826
Page	: ! ! !	1	nd Right	000	290	000	0 494 494
			Westbound t Thru Rig	000	000	000	265
	. 0		Left	000	92	000	000
	SIR	1 1 1 1 1	nd Right	50	382 382 382	74 795 869	000
49:50	EIS/F	eport	Eastbound Left Thru Right	000	000	000	373
Tue Nov 5, 1996 10:49:50	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	Turning Movement Report	Ea Left	0 160 160	100	223 224 447	562
5, 199	t Vision 2000 /Maximum Rai PM Peak Hour	ng Movement PM Peak Hour	nd ight	92 0	0 8 8 9	75 218 293	418
Nov	Port ine/M	rning	Southbound Left Thru Right	109 210 319	132 142 274	Extension 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000
Tue	FISCO/ um Mar	<u> </u>	Sou Left 7	t 000	105 105	Exte 0 0	Extension 0 31 0 683
	Maxim	1		1.rma S 0 0	1th St 28 0 28	ch St.	
			Northbound Left Thru Right	it./ Bu 590 354 944	it./ 14 414 255 669	t./7t 0 325 325	th St 0 0
			Nor eft T	in and and and and and and and and and an	cime S 0 295 295	time S 36 730 766	St./7
A-PM.CMD		† ; !	Volume Type L	#3 Maritime St./ Burma St. Base 5 590 0 Added 0 354 0 Total 5 944 0	#4 Maritime St./ 14th St. Base 0 414 28 Added 295 255 0 Total 295 669 28	#5 Maritime St./ 7th St. Base 36 0 0 Added 730 325 0 Total 766 325 0	#6 7th St./ 7th St. Base 0 0 Added 0 0
Page 2-1	1						
			vo			00000	0.0
,	V.		16			0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.7 0.0 0.7 1.0 0.7 1.0 0.7 1.0 0.0 0.7 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
0	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	ם נ	15	1		0 0.0 0 0.0 0 32.0 0 32.0	
Tue Nov 5, 1996 10:49:50	O EIS,	Trip Distribution Report	14	1		0 0.0 0 20.0 0 20.0 0 20.0	
01 966	on 200 um Rai k Hour	ution	13	1		0.0	
5, 19	FISCO/Port Vision 2000 um Marine/Maximum Rail PM Peak Hour	strib	Gates	1		0.0 20.0 20.0 20.0	
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Ħ	FISC		ru r	0.0	00000	00000	0.0
	Maxi	1 1 1 1	4	0.0	00000	00000	0.0
	1 1 1 1 1 1	 	м	0.0	0.00	1000.0	0.0
A-PM.CMD		1		Zone 1 3	7 8 10 11	17 18 21 23 26	27

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1637 1638

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15

589 589

#9 7th/Middle Harbor Rd Base 0 0 Added 4 0 346 Total 4 0 346

1583 2062

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0 39

0 68

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628 628

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#8 Adeline St./ 3rd St. Base 36 0 122 Added 0 955 0 Total 36 955 122

1003 1855

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229

95

#7 Base Added Total

1609 1609

395

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15

#10 New Harbor/Mid Harbor Rd Base 0 0 0 Added 346 0 589 0 Total 346 0 589 0

816 2215

0

A-PM.CMD		Tue Nov	Nov 5,	5, 1996 10:49:50	10:49:	.50			Page	3-2		A-PM.CMD	۵			Tue Nov	5,	1996	1996 10:49:50	0.9			Page	3-3	,
	F Maximu	TSCO/F	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	t Vision 2004 // Maximum Rail	000 EI ail Al	IS/EIR terna	cive	 	; ; ; ;	 		1 1 1 1 1	, ; ; ; ;		F)	SCO/P	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna PM Peak Hour	t Vision 200 /Maximum Rai PM Peak Hour	000 EIS ail Alt	EIS/EIR Alternative			i !		ı
Volume Northbound Type Left Thru Right	;	Sout eft Th	Southbound Left Thru Right	i	Eastbound ft Thru Rig	Eastbound Left Thru Right	;	Westbound Left Thru Rig	oound Total ru Right Volume	Total		Volume Type	Northbound Left Thru Right	Northbound t Thru Rig	! !	Sout:	Southbound Left Thru Right	Ea nt Left	Eastbound t Thru Ri	व		Westbound t Thru Ri	nd Right	Westbound Total Left Thru Right Volume	⊣ 0
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0 !					138 157		0 1	0 202	919	1423	m e	Base	329			0	0 0						0	426	
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#14 Union St./ 5th	St./	I-880 N	North Ramps	amps								#160												200	
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Added 0 0 Total 0 194	158 439	00	144	30	31 9	0 76	18 6	278 31		-	* 40	Total	0	, 0	0	0	. 0					7	0	62	7
,	g	_	100%	r o								#161													
#15 /th St./ 1-880 Base 0 197	1-880 NB KAMPS 197 3 2		ב	19e m 205	0 10	108	0	0 53		. 569	6	Base	0	0	0	0 -105	05	0					0	-255	ω i
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Total 485 197	٣	73		473 3		126	0	Ŋ		1710	0	Total	0	9	5	>	XO	>					•	i	•
#16 7th St./ I-880	SB Ramps	sdi										#165			,		,	•						-660	c
0	0	0	0	0				378 (385	மு ப	Base	0 0	-	o c	0 0	158	.		674		0	0	832	2 (1
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10001			655-0/2-			# 4 Maritime St./ 14th St.		C 15.9 0.392	C 19.9 0.762	+ 3.975 D/V
						# 5 Maritime St./ 7th St. Extensio		B 5.8 0.080	B 13.7 0.677	+ 7.904 D/V
						# 6 7th St./ 7th St. Extension		C 20.9 0.000	B 14.4 0.632	-6.444 D/V
						# 8 Adeline St./ 3rd St.		C 20.4 0.084	F 64.3 0.656	+43.947 D/V
						# 9 7th/Middle Harbor Rd		C 15.8 0.000	C 16.4 0.571	+ 0.612 D/V
						# 10 New Harbor/Mid Harbor Rd	rbor Rd	0.0 0.000	C 15.2 0.621	+15.243 D/V
						# 12 Maritime St./ W.Grand Ave./ I-		B 12.4 0.237	C 18.8 0.411	+ 6.400 D/V
						# 13 Adeline St./ 5th St./ I-880 SB		C 17.6 0.328	D 29.7 0.504	+12.076 D/V
						# 14 Union St./ 5th St./ I-880 Nort		B 12.5 0.178	C 16.8 0.226	+ 4.303 D/V
						# 15 7th St./ I-880 NB Ramps / Fron		B 11.5 0.135	C 18.2 0.397	+ 6.724 D/V
						# 16 7th St./ I-880 SB Ramps		A 2.6 0.113	B 5.7 0.557	+ 3.122 D/V

C 2.1 0.000 + 0.000 V/C C 22.1 0.639 + 0.988 D/V

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17 14th St./ I-880 Frontage Rd.

18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505

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Movement: 		<u>-</u>				1 4	=	10 to to to to to	1 5 6 1	-	Control:		cted	 G	Protected	p	Permitted	tted	<u> </u>	Permitted
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	1.00			0 1.00	1.00	1.00	1.00	1.00 1.00		00.	PHF Adj:	1.00 1.00		-	-		1.0		1.00	1.00 1.00
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Green/Cycle:	0.24 0.62		0.00 0.48	48 0.48	0.20	00.0	0.15	0.00 0.00		0.00	Volume/Cap:	0.84		.74 0.44	4 0.49	0.49	0.84 0.00	0 0.61	0.23	0.00
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	Maxim	FISCO/	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	n 2000 m Rail Hour	EIS/E	native					FI: Maximum	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail PM Peak Hour	t Vision 2000 /Maximum Rail PM Peak Hour	EIS/EIR Alternative	υ		1
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	evel Of eration	Level Of Service Computation Report perations Method (Future Volume Alt	computa Future	tion R Volum	eport e Alte	rnativ	***************************************	* * * * * * * * * * * * * * * * * * * *		Level Of Service Computation Report 1994 HCM Operations Method (Puture Volume Alternative)	Level Of Service Computation Report Operations Method (Future Volume Alt	Computa (Future	Computation Report (Future Volume Alternative) ************************************	ernative	(i) ************************************	* * *
Intersection #5 Maritime St./ 7th St. Extension	#5 Maritime	s St./	7th St. Ex	tensic	n: *****	* * * *	***	*	*****	Intersection **********	Intersection #6 7th St./ 7th St. Extension	h St. Exten:	sion	*******	*****	******	****
Cycle (sec):	100		U	ritica	Critical Vol./Cap.	/Cap.	: (x)		0.677	Cycle (sec):	100		Critica	Critical Vol./Cap.	: (x)	0.632	73
Loss Time (sec): Optimal Cycle:	4	8 (Y+R =	4 sec)	verage evel 0	Average Delay (se Level Of Service:	(sec/ ice:	veh):	H	13.7 B	Loss Time (sec): Optimal Cycle:	588	(Y+R = 4 sec)	Average Level O	sec) Average Delay (sec/veh): Level Of Service:	/veh):	14.4 B	4 П
*****		****	***************************************	****	*****	****	****	*	*****	*****	*	**************************************	***	***	***	***	****
Approach: Movement:	North Bound	und - R	South Bound	und - R	L Ea	East Bound - T -	nd R	West Bound L - T -	Bound R	Approach: Movement:	L T - R	South Bound	sound - R	L - T - L	י ווומ א	r - T - I	r R
						1 4		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dayotootoo			Dayotest		Drotected	
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Base Vol:	36 0	0	0	75	223	0	74		0	Base Vol:	0	31		0	0		0
Growth Adj:	1.00	1.00	1.00 1.00	1.00	-		1.00	1.0	0 1.00	Growth Adj:	1.00 1.0	1.00 1.0	7.0	1.0	1.00	1.00 1.00	1.00
Initial Bse:	36 0	0 0	0 0	75	223	0 0	74	0 0	0 0	Initial Bse: Added Vol:	000	0 683	0 418	562 373	0	0 265	494
DasserBWV01:		o c	000	0 0	# C	0 0	20			PasserBvVol:	0				0		0
Initial Fut:	33	0	0 307	293	447	0	869		0 0	Initial Fut:	0	0 714		562 373		0 265	494
User Adj:	1.00	1.00	1.00 1.00	1.00	1.00 1.00		1.00	1		User Adj:	1.00	1.00		1.00 1.00			1.00
PHF Adj:	1.00	1.00	_	1.00			1.00	1.0	0 1.00	PHF Adj:	1.00 1.00 1.00	1.00 1.0	0 1.00	1.00 1.00	00.1	1.00 1.00	1.00
PHF Volume:	766 325	0 0	307	293	7.44	o c	р 0 0	> c		Reduct Vol:		. 0			0		0
Reduced Vol:	33	0	30	293	447	0	869			Reduced Vol:	0		41	562 373	0	0 265	464
PCE Adj:	1.00	1.00		1.00	1.00 1.00		1.00	1.0	0 1.00	PCE Adj:	1.00	1.00					1.00
MLF Adj:			1.00 1.05	1.00	1.03	1.00	1.00	1.0	0 1.00	MLF Adj:	1.0	1.03 1.0	_	Н		-	1.10
Final Vol.:	789 342	0	0 322	293	460	0	869	0	0 0	Final Vol.:	0	0 736	0 418	579 392	0	0 291	543
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Adjustment:	1.00	1.00	1.00 1.00		0.95	1.00			0 1.00	Adjustment:	1.00	0.95				00.	0.90
Lanes:	2.00	00.0	0.00 2.00		2.00	00.0		0.0	0.0	Lanes:	0.	2.00 0.0		2.00 2.00	0.00	0.00 1.05	1.95
Final Sat.:	3610 3800	。 -	0 3800	1615	3610	0	1615	0	0	Final Sat.:		0 3640	CTOT O				7
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Vol/Sat:	0.09	00.0	0.00 0.08	0.18	0.13	00.0		0.00 00.00	00.00	Vol/Sat:	0.00 0.00 0.00	00.00.00	0 0.26	0.16 0.10	00.0	0.00 0.16	0.16
Crit Moves:	* * *	0		(,	6	* 6	0	6	Crit Moves:	00 00 00 00 00	00 0 11 0 00		125 0.51	00.0	0.00 0.26	0.67
Green/Cycle: Volume/Cap:	0.75 0.18	00.00	0.00 0.42	0.29	0.30	0.00		0.00 0.00		Volume/Cap:	0.00	0.50					0.24
		=				1	=									1 1 1 1 1 1 1 1 1	
Level Of Service Module:	vice Module:		A 22 0	r.	12.2	0	4	0.0	0.0	Delay/Veh: 0.0 0.0		0.0 14.4 0.0	9.91 0	22.4 8.6	0.0	0.0 22.0	4.3
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****** ****** ****** ****** ****** ****	ap. (X): ap. (X	Alterna Alt	### FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative #### Pask Hour Level Of Service Computation Report ###################################	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)
Green/Cycle: 0.38 0.00 Volume/Cap: 0.01 0.00 Level Of Service Modul Delay/Veh: 12.6 0.0 User DelAdj: 1.00 1.00	0.20 0.29 22.0	0.20 0.20 0.20 0.20 0.20 0.00 0.08 0.08	0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.95 0.08 0.08 0.08 0.29 0.29 0.29 40.7 21.0 21.0 21.0 22.0 22.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Intersection #9 7th/Middle Harbor Rd

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· · · · · · · · · · · · · · · · · · ·	****	******	******	*******	*******	*	*****	***************************************	*******	******	****	****	***		***	***
Cycle (sec):	100		Critica	Critical Vol./Cap. (X):	: (X) : qr	0.621	21	Cycle (sec):	-	.00 10 (4±b -	(200	ritical Perade D	Critical Vol./Cap. (X): Average Delay (sec/veh)	(x): /veh):	0.1	18.8
Loss Time (sec): Optimal Cycle:	2): 8 (Y	(Y+K = 4 sec	:) Average Level (4 sec) Average Delay (sec/ven) Level Of Service:	sec/ven)		iο	Optimal Cycle:	3: 7	70	Le	Level of	Of Service:			U
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Approach: Movement:	North Bound L - T - 1	l South R L -	South Bound	East L - 1	East Bound - T - R	West Bound	ound - R	Approach: Movement:	North Bound L - T -	ound - R	South Bound	: عد	East Bou	, R - R	I - I	Poutitu - R
											111111111111111111111111111111111111111	<u>-</u>	Dantected	·	Profected	ted :
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Aigues: Min. Green:		20 0	0	0	20 20	10	0	Min. Green:	10		10 20		20		10	,
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	0	0	0			0.		Base Vol:	0		σ ;	73				13
Growth Adj:	1.00	1.00	1.0	1.0	1.0	1.00 1.0	1.0	Growth Adj:	i.	0.1	1.00 1.00	1.00	20 1.00	00.1	1.00 1.00	4
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Reduct Vol:	0 0		9 0	5 C	מאכ שו	30.5		Reduced Vol:	N	7	N	23	45	460	52 624	4 13
Reduced Vol:	346 0 5	589 0	00 1	1.00	00 1 00	1.00 1.0	1.0	PCE Adj:	H		H		1.00 1.00			
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n Fl				0		•		Saturation F	1900 1900	1900	1900 1900	1900	1900 1900	1900	1900 1900	0 1900
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	0.00	0.00		0.00	0.26 0.26	0.35 0.61	00.0	Volume/Can:		2 0						
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Delay/Veh:		0.0		0.0		18.7		Delay/Veh:	21.9		1 00 1 00	7 7 7 7 7	1 00 1 00 1	0.0		1.00
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**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Of Service lons Method	Computa (Future *******	Computation Report (Future Volume Alternative	eport e Alter	native)	* * * * * * * * * * * * * * * * * * * *	# ## ## ## ## ## ## ## ## ## ## ## ## #	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Le 1994 HCM Ope ************************************	vel Of rations ******	Level Of Service Computation Report HCM Operations Method (Future Volume Alt ************************************	ce Computation Rej	Computation Report (Future Volume Alternative) ************************************	ernativ	* * * * * * * * * * * * * * * * * * * *	* * *
.*************************************	* ~	* * * * * * * * * * * * * * * * * * *	**************************************	**************************************	****** /Cap. ((sec/v ice:	(X): (veh):	**************************************	7	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 71 Level Of Service:	(c): 11	00 11 (Y+R = 71	4 sec) Av	itical erage I	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	(X): /veh):	0.226 16.8 C	26 0
Approach: L	**************************************	**************************************	******* Bound	* * * * * * * * * * * * * * * * * * *	******** East Bound - T -	*	********** West Bound L - T - R	******* Bound I - R	Approach: Movement:	North Bound L - T -	nd R	South Bound L - T -	ng K	East Bound L - T -	ınd - R	West Bound	ound - R
Control: Rights:	ed	 Pr		<u> </u>	Split Phase Include	<u></u>	H	nase nde	Control: Rights:	i to H	1	Protected Include		Split Phase Include	ase de de	Split Phase Include	hase ude
Min. Green: Lanes:	10 20 20 1 0 1 1 0	100	20 20 1 1 0	10	0 1	0 0	1 0 0	1 1	Lanes:	0 0 1 1	<u>-</u>		- ;		1 0	o i	-
Volume Module:		-	69 0	138	157	- 0	0 202	616	Volume Module Base Vol:	0 194	_	144	30	31 97	•	32 31	
	1.00 1.0	1.00 1.0	ч.	7	1.00 1	1.00 1	1.00 1.00 0 202	1.00 616	Growth Adj: Initial Bse:	1.00 1.00 0 194		1.00		0.6		3.0	34
Added Vol:	189 52	0 12	0 0	00	00	158	348 0 0 0	00	Added Vol: PasserByVol:	00	158		00		00		
	189 52	24	22 69	138	157	158	348 202 1.00 1.00	616 0.50	Initial Fut: User Adj:	0 194 1.00 1.00	1.00	0 144 1.00 1.00	30	31 97 1.00 1.00	1.00	278 31 1.00 1.00	
	1.00	1.00		1.00	1.00		1.00 1.00		PHF Adj:	1.00 1.00		1.00 1.00		1.00 1.00 31 97	1.00	1.00 1.00 278 31	34
PHF Volume: Reduct Vol:	189	7 4 7			0				Reduct Vol:		0 6		0 6	0 0	0 8	0 0 15 875	34 0
Reduced Vol: PCE Adi:	246 189 520 1.00 1.00 1.00	0 241 122 0 1.00 1.00	22 69 00 1.00	138	157	158	348 202 1.00 1.00	308	Reduced Vol: PCE Adj:			1.00 1.00			1.00		
-	1.00	1.00		1.10	1.10		1.00 1.05 348 212		MLF Adj: Final Vol.:	1.00 1.00 0 194	1.05	1.00 1.05 0 151	32	1.05 1.05 33 102	1.05	1.00 1.00 278 31	1.00
	1	<u>-</u>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	=	1			-	Saturation Flow Module:	low Module:		• • • • • • • • • • •		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			!
Sat/Lane:		1900					1900 1900	1900	Sat/Lane:	1900 1900	1900	1900 1900	1900	1900 1900 0.97	1900	1900 1900 0.95 1.00	1900
Adjustment: Lanes:	0.95 1.00 0.85 1.00 1.00 1.00	5 0.95 0.95 0 1.00 1.28	95 0.95 28 0.72	1.00	1.00				Lanes:	0.00 1.00					0.25		
Final Sat.:	1805 1900 1615	5 1805 2310	10 1300	1787	1787	1787 1 	1805 1370	2088	Final Sat.:		3230	T#05 0	=	7557 061	= :		-
Capacity Analysis Module: Vol/Sat: 0.14 0.10 0	ysis Module: 0.14 0.10 0.32	2 0.13 0.06	90.0 90	60.0	0.10	0.10	0.19 0.15	0.15	Capacity Analysis Vol/Sat: 0.00	lysis Module 0.00 0.10	0.14	0.00 0.05	0.05	0.04 0.04	0.04	0.15 0.02	2 0.02
es: cle:	0.28	0.12			0.20		* 0.		Crit Moves: Green/Cycle:	0.00 0.33	****	0.00 0.33	0.33	0.20 0.20	0.20	0.36 0.36	5 0.36
Volume/Cap:	0.69 0.35 0.57	7 1.14 0.28	0.2	8 0.43	0.48	0.49 0 	0.69 0.55	0.55	volume/cap:		_		=		=	:	- 1
Level Of Service Module Delay/Veh: 27.7 18.5		134.4			23.2		23.3 20.3		Level Of Service Module Delay/Veh: 0.0 16.1	vice Module 0.0 16.1	16.9	0.0 15.2	15.2	21.6 21.6	21.6	16.0 13.5	5 13.6
User DelAdj: 1.00 1.00 AdiDel/Veh: 27.7 18.5	H	00 1.00 1.00 9.6 134.4 21.9	00 1.00 .9 21.9	1.00	1.00	1.00 1	1.00 1.00 23.3 20.3	1.00	User Deind): AdjDel/Veh:	0.0 16.1	16.9		15.2	21.6 21.6	21.6	16.0 13.5	
Queue:	7 4 1	10 15	W	4	4	4	6	œ ;	Onene:	0 4	10	0 3	.****	1 2 ********	0 * * * *	· * * * * * * * * * * * * * * * * * * *	1 7 7
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A-PM.CMD		Tue	Tue Nov 5,	1996 1	1996 10:49:51	ų		Page	16-1	A-PM.CMD		Ē	Tue Nov 5, 1	1996 10:	10:49:51	1	Page	17-1	!
1 1 1 1 1 1 1 4 4 1 1	Maxim	FISCO/	FISCO/Port Vision 2000 BIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	t Vision 200 /Maximum Rai PM Peak Hour	000 EIS	/EIR ernativ	9				Маж	FISCO	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna PM Peak Hour	on 2000 um Rail k Hour	EIS/EIR Alternative	ø.		1 1 1 3	!
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of Service Level Of Service 1994 HCM Operations Method ************************************	evel Of eration ******	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	Compute (Future)	itation ire Vol *****	Computation Report (Future Volume Alternative)	rernat: *****	! * ·)	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternativ ************************************	1994 HCM Op	Level Of perations ******* t./ I-880	Level Of Service Operations Method ************************************	Computa (Future ******	Level Of Service Computation Report Operations Method (Future Volume Alternative) ************************************	ernativ	* * * * * *	* * *	* *
**************************************	**************************************	.*************************************	**************************************	Criti Avera Level	critical Vol./Cap Average Delay (se Level Of Service:	<pre>critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:</pre>	(X): c/veh):	* +	0.397 18.2 C	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 100 5 (Y+R	0 5 (Y+R 5	4 sec)	Critica Average Level O	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	(x): :/veh):	*	0.557 5.7 B ******	*
**************************************	******** North Bo L - T	***** und - R	South Bound	1 Bound T - R	* 1 * -	East Bound L - T - R	ound - R		sound - R	Approach: Movement:	z u	ound - R	South Bound	ound - R	East Bound	ound - R	West L - 7	West Bound	- ~
Control: Rights:	Protected Include	3d 3d 1e	Protected Ovl	scted 71	<u>:</u> -	Protected Include		 Protected Include	1	Control: Rights:	rote		rote		rot		<u> </u>	ed	_
Min. Green: Lanes:	10 20 2 0 0 1	20	10 2	0 0	٦ : و	10 20 0 2	0 50	0 20	1 0	Min. Green: Lanes:	000	00		° -	0 0 7	0 17 0	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0 0	
Volume Module					= :	;	1 1 1 1		!	Volume Module:							378	o	- 0
Base Vol: Growth Adj:	197	1.00	1.00 1.00	-		-	1.00	1.	1.00	Growth Adj:	1.0	1.0	1.0	1.0	1.00 1.00	1.00	1.00 1.00	00 1.00	00
Initial Bse: Added Vol:	0 197 485 0	m 0	0 0	0 205	36	0 108	00	0 0	-10	initial Bse: Added Vol:		00			38	674			
PasserByVol:		0 (0 (7		0 0	0 0	0 -	PasserByVol:	00	0 0	00	00	0 0	681	378 7	0 758	00
Initial Fut: User Adj:	485 197 1.00 1.00	1.00	1.00 1.00	00 1.00		365 126 1.00 1.00	1.0	1.00 1	Т	User Adj:						1.00			00
PHF Adj:	1.00 1.00	1.00	1.00 1.00		00 1.00	00 1.00	1.00	1.00 1.00	1.00	PHF Adj: PHF Volume:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00 378 758	00 1.00 758 0	0 0
Reduct Vol:		10	, 0				0		0	Reduct Vol:				0		0 ;		0 (0 6
Reduced Vol:	485 197	e 6	2 2	-	473 365	55 126	0 6	1.00 1.00	1.00	Reduced Vol: PCE Adi:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	3/8 /58 1.00 1.00	.00 1.00	9 8
MLF Adj:	1.03 1.00	1.00	1.00 1.00			00 1.05		1.00 1		MLF Adj:	1.00 1.00		1.00 1.00		1.00 1.05	1.00	1.03 1.05		00
Final Vol.:	500 197	m _	α_	0 53	535 365	55 133	o ¯	0 61	H !!	Final Vol.:	0 0	0	0 0	0	704 0	189	389	796	- - -
Saturation Flow Module: Sat/Lane: 1900 1900	low Module: 1900 1900	1900	1900 1900	<u> </u>		00 1 00	!	1900			Flow Module:	1900	1900 1900	1900	1900 1900	1900	1900 1900	00 1900	. 00
Adjustment: Lanes:	0.95 1.00 2.00 0.98	1.00	0.95 1.00 1.00 0.00	00 0.85	85 0.95 00 1.00	35 1.00 30 2.00	0.00	0.00 1.97	0.03	rajustment: Lanes:	0.0								00
Final Sat.:	3610 1872	29	1805	0 3230	30 1805	3800	0	0 3739	9 61	Final Sat.:	0 0	0	0 0	0	0 3800	1615	3610 3800	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- - -
Capacity Analysis Module: Vol/Sat: 0.14 0.11 0	lysis Module 0.14 0.11	e: 0.11	0.00 0.00	00 0.17	_	20 0.04	00.00	0.00	20.02	Capacity Analysis Module Vol/Sat: 0.00 0.00	Lysis Modu	le: 0.00	0.00 0.00	0.00	0.00 0.11	0.42	0.11 0.21	21 0.00	00
Crit Moves: Green/Cycle:	* * * 0 . 20	0.27	0.13 0.00	**	**** 50 0.30	** 30 0.50 58 0 07	0.00	0.00 0.20	0.20	Crit Moves: Green/Cycle: Volume/Can:	0.00 0.00	0.00	0.00 0.00	0.00	0.00 0.76	0.76	0.19 0.95	95 0.00	000
volume/cap:	0.68 0.39	0.39		-			:		- !	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		- !		- !				1 1 1 1	-
Level Of Service Module: Delay/Veh: 25.6 19.6 Hear Deladi: 1 00 1 00	vice Module: 25.6 19.6	19.6	24.2 0.0	-	9.9 22.5	.5 8.5 00 1.00	0.0	0.0 21.0	21.0	Level Of Service Module Delay/Veh: 0.0 0.0 User DelAdj: 1.00 1.00	vice Modulo 0.0 0.0 1.00 1.00	e: 0.0 1.00	0.0 0.0	0.0	0.0	-	24.3 0.1 1.00 1.00	-	0.0
AdjDel/Veh:	25.6 19.6	19.6	24.2			8.5		0.0		AdjDel/Veh:	0.0 0.0		0.0 0.0		0.0		24.3 0	0.1 0.	0.0
Queue: 13 5 0 0 0 7 7 7 4 4 4 4 4 4 4 4 4 4 4 4 4 4	13 D *********	* * * *	* * * * *	****	*****	******	**	*	*****	******	*****	*****	*****	****	*****	* * * * *	******	* * * * * *	* *

A-PM.CMD Tue Nov 5, 1996 10:49:51 Page 18-1	A-PM.CMD Tue Nov 5, 1996 10:49:51 Page 19-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour
Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative) ***********************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************
**************************************	Cycle (sec): 100 Critical Vol./Cap. (X): 0.639 Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 22.1
Approach: North Bound South Bound East Bound West Bound	**************
Movement: L - T - R L - T - R L - T - R L - T - R	North Bound South Bound Bast Bound
rolled Stop Sign Stop Si Lude Include Inclu	H. !
Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 0 0 0 0 0 0 1 0 0 1	Include Include
	Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20
Base Vol: 0 62 130 4 0 0 0 0 115 0 / Growth Adi: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
: 0 62 130 4 0 0 0 0 0 115	Volume Module:
0 36	j: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
427 130 4 268 0 0 0 0 115	: 75 72 0 759 0 6 86 277 3 0 4
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Added Vol: 0 186 179 0 130 0 0 76 0 138 52 0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	258 179 759 130 6 86 353 3 138 508
	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 0 427 130 4 268 0 0 0 0 115 0 7	1.00 1.00 1.00 1.00 1.00 1.00 6.00 6.00
Adjusted Volume Module: Adjusted Volume Module: 0.8 0.8 0.8	ict Vol: 0 0 0 0 0 0 0 0 0 0 0
e/Cars: xxxx xxxx xxxx xxxx	/ol: 75 258 179 759 130 6
XXXXX XXXX XXXX XXXX XXXX XXXX XXXX	1.05 1.00 1.10
1.10 1.00 1.00 1.1	1.: 75 271 188 797 130 6 86 371 3 138 559
XXXX	
0 427 130 4 268 0 0 0	n Fl
	0.94 0.95 0.99 0.99 0.95 1.00 1.00 0.95 0.94
XXXX	1.00 1.18 0.82 2.00 0.96 0.04 1.00 1.98 0.02 1.00 1.82
	Final Sat.: 1805 2109 1463 3610 1798 83 1805 3770 30 1805 3249 2109
1	Canarity Analysis Module:
14 xxxx 1	0.13 0.13 0.22 0.07 0.07 0.05 0.10 0.10 0.08
1.00 xxxx xxxxx xxxxx xxxx	****
.: XXXX XXXX XXXXX 861 XXXX XXXX X	
2 XXXX XXXXX XXXX XXXXX 15.8 XXXX 3	ervice N
* 5	1.00 1.00 1.00 1.00 1.00 1.00 1.00
LI - LIK - KI LI - LIK - KI LI - KI LIK - KI LIK - KI LIK - KI KI KI KI KI KI KI KI KI KI KI KI KI	21.6 25.1 25.1 19.4 15.6 15.6 29.0 20.9 20.9 31.4 22.3 22.
XXXX XXXXX XXXXX XXXXX	2 7
Shared Los: * * * * * * * * * * * * * * * * * * *	
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B-AM.CMD	Tue Nov 5,	1996 13:06:45		щ	Page 1-1	1	THE NOT E 1995 13.06.45		Бад	1-2
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FISCO/Port Vis Minimum Marine/Min AM Pe	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	ive				FISCO/Port Vie Minimum Marine/Mir	1) 	
							AM Peak Hour		1	
	Trip Gene: Forecast fo	Trip Generation Report Forecast for AM Peak Hour					Zone # Subzone Amount Units In Out In	s Trips Out	s Total Trips	1 % Of s Total
Zone # Subzone	Amount Units	Rate Rate In Out	Trips Trips In Out		Total % Trips Tc	% Of Total	Zone 23 Subtotal	7		7.7
1 New Harbor	391.00 Employees	0.26 0.05	102	50	122	1 2	24 SP Rail Term 1.00 Truck External 175.00 180.00 175 Zone 24 Subtotal 175	5 180	0 355 0 355	5 6.7
t r	Subtotal	0.28 0.05	102	50 50	132		25 UP Rail Term 1.00 Truck External 59.00 63.00 59 Zone 25 Subtotal 59		63 122 63 122	2 2 .3
Zone 2 3 J.I.T. Zone 3	Subtotal	0.40 0.09	112 67 67	20 15	132 82 82	2.5 1.6 1.6	Middle Harbr 1.00 Truck External 298.00 317.00 Zone 26 Subtotal			
4 SP Rail Term Zone 4 S	n 150.00 Employees Subtotal	0.40 0.09	09	13	73	1.4	Truck External 354.00 377.00			
S UP Rail Term Zone 5 3	il Term 67.00 Employees Zone 5 Subtotal	0.40 0.09	27	99	8 B	9.0	28 Outer Harbor 1.00 Truck External 457.00 487.00 457 Zone 28 Subtotal	7 487	7 944	4 17.9
6 Middle Harbr Zone 6	e Harbr 516.00 Employees Zone 6 Subtotal	0.26 0.05	134 134	7 9 7 9 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	160	3.0 3.0	TOTAL 2928	8 2351	1	5279 100.0
7 7th St Harbr Zone 7 8	t Harbr 613.00 Employees Zone 7 Subtotal	0.26 0.05	159 159	31	190	3.6				
8 Outer Harbor Zone 8 3	792.00 Employees Subtotal	0.26 0.05	206	4 4 0 0	246 246	4.7				
10 New Park Zone 10	ark 1.00 Total Trips Zone 10 Subtotal	24.00 16.00	24 24	16 16	4 4 0 0	8.0				
11 New Harbor Zone 11	1.00 Trucks Inter Subtotal	r 46.00 49.00	46 46	4 4 0 0	95 95	1.8				
16 Middle Harbr Zone 16	: 1.00 Trucks Inter	r 60.00 64.00	09	64 64	124	2.3				
17 7th St Harbr Zone 17	: 1.00 Trucks Inter 7 Subtotal	r 72.00 77.00	72	77	149	2.8				
18 Outer Harbor Zone 18	1.00 Trucks Inter Subtotal	r 93.00 99.00	93 83	6 6 6	192 192	3.6				
21 New Harbor Zone 21	1.00 Truck External Subtotal	nal 226.00 241.00	226 226	241 241	467	8. 8 8. 8				
23 J.I.T.	1.00 Truck Exter	1.00 Truck External 197.00 210.00	197	210	407	7.7				
Traffix 6.8.030	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling	Mssoc. Licensed to 1	Dowling	Assoc.,	Oakland	rug	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	ng Ası	eo 'oo	kland

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Page 3	; ; ; ; ;		; ; • • •	Left Thru Right Volume	c	0	0		87	9 0	ò		0 (o c	>		54	523	577		0	0	0	0	y u	2	26		0	0	0	•	0 (o 6	0	ć	σ (5 0	n
	1		Westbound	hru R	c	0	0		0	0 0	>		0 (o c	•		0	499	499		338	271	0	609	o u	3 0	29		0	609	609	,	0 !	227	227		300	5 C	200
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	R				L	nο	.u		0	364	364		37	279	316		0	62	62		39	80	71	118	Ċ	, ,	53		0	0	0		0	133	133	;	438	478	916
6:45	EIS/EI Alter	port	Eastbound	hru Ri	c	, 0	0		0	0 0	5		o ·	0 0	>		0	422	422		0	202	0	202		0 <	vo		0	501	501		0	210	210		394	0 ;	394
13:06:45	2000 n Rail Hour	ant Re-	Eas	Left Thru Right	c	147	147		0	115	115		69	70	139		0	139	139		0	0	0	0	•	0 0	0 00		0	0	0		0	0	0	sdı	48	0 9	48
, 1996	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	Turning Movement Report AM Peak Hour			•	0 224	224		0	140	140		334	986	420		0	186	186		0	0	0	0	(0 0	56		0	0	0		0	0	0	80	47	0 !	4.7
Tue Nov 5	Port V rine/M AM	rning	Southbound	Left Thru Right		287 391	678		261	251	512	sion	0	529	529		0	160	160		0	0	0	0	•	2 0	996		0	0	0		0	0	0	8-I/	28	0	28
Tue	ISCO/1	Ä	Sout	eft. T	(0				103	Extension	0			Extension	0	463	463		פשרה ס	0	0	0	č	9 9	56		0	0	0		0	0	0		16	0	16
	Minim	1 1 1 1 1			Burma St.	00	0	14th St.		0 ;	რ	h St.	0	0	0			49	49			207	159	411		٦ °	31	Harbor	0	122	122		0	0	0	W.Grand	0	119	119
	 	i 	Northbound	ıru Ri		78 282	360	St. / 14		167	258	St./ 7th	0	489	189	7th St.	0	138	138	, i	100 r	0	0	0	./ 3rd	0 0	700			0	0		0	0	0	_	33	0	33
	! ! ! !	: : : :	Nort	Left Thru Right			. m				392				469	St. / 7		28		•	1e Har 53	? ⊣	106	160	ine St		5 00	New Mi	0	0	0		0	122	122		0	310	310
B-AM.CMD] 	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u>o</u>	Type L	#3 Maritime	Base Added	Total	#4 Maritime	Base	Added	Total	#5 Maritime	Base	Added	Total	#6 7th 9		Added	Total	;	#7 Middle Harbor kd. / Base 53 0 45	Added	PassBy	Total	#8 Adeline St./ 3rd	Base	Added Total	#9 7th/New Middle	Base	Added	Total	#10	Base	Added	Total	#12 Maritime	Base	Added	Total
ΔQ.	ı	•	Þ	F	##	H		**	- 14	7	•	-	-	7	•		-																						
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Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

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Nov 5, 1996 13:06:45 Page 3-2	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	Southbound Eastbound Westbound Total Left Thru Right Left Thru Right Volume	#13 Adeline St./ 5th St./ I-880 SB Ramp Base 0 0 72 109 165 256 51 0 0 169 364 1186 Added 125 123 451 0 189 0 0 0 207 569 0 0 1665 Total 125 123 451 72 298 165 256 51 207 569 169 364 2851	North Ramps 154 31 24 43 13 205 31 115 836 0 0 0 0 0 125 0 0 333 154 31 24 43 13 330 31 115 1169	Frontage Rd. 0 94 0 16 0 62 1 759 0 379 332 13 0 0 19 0 1422 0 473 332 29 0 0 81 1 2181	0 0 0 0 0 65 0 0 65 0 0 0 345 589 0 1077 0 2011 0 0 0 345 589 65 1077 0 2076	d. 0 0 0 0 0 140 0 6 265 379 0 0 0 0 0 0 0 711 379 0 0 0 0 140 0 6 976	lge Rd. 48 6 65 234 12 0 152 449 1653 239 0 0 119 0 140 136 0 966 287 6 65 353 12 140 288 449 2619	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-173 -26 -24 0 0 0 0 0 -379 86 40 37 0 0 0 0 0 232 -87 14 13 0 0 0 0 0 -147	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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Page 5-1			Change in	9.0 0.285 + 2.643 D/V	+ 6.156 D/V
	1		Future Del/ V/	B 9.0 0.285	C 21.2 0.818
Tue Nov 5, 1996 13:06:46	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	Impact Analysis Report Level Of Service	Base Del/ V/	B 6.3 0.089	C 15.0 0.161 C 21.2 0.818 + 6.156 D/V
Tue No	FISCO/Po: Minimum Marii	Impac Le		# 3 Maritime St./ Burma St.	# 4 Maritime St./ 14th St.
B-AM.CMD			Intersection	# 3 Maritime	# 4 Maritime
4-5		WB Link Total In Out Total Volume	0000	117 227 1311	٤/-
Page 4-5		Link Total Total Volume	ć	227	135
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Tue Nov 5, 1996 13:06:45	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	SB Link In Out Total	. (0 -288 -312 -600 -359 -333 -532 0 193 235 428 352 303 655	-172
rue No	Marin	SB Link Out Tot	•	3 235	5 -77
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i	FISCO/Port Vision 2000 E Minimum Marine/Minimum Rail AM Peak Hour	isi inir Peal	t Vision 2000 EIS/EIR e/Minimum Rail Altern AM Peak Hour	iS/EIR Alternative	
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II	Intersection		Base Del/ V/	Future Del/	Change in
#	3 Maritime St./ Burma St.	LOS	S Veh C 6.3 0.089	LOS Veh C B 9.0 0.285	+ 2.643 D/V
#	4 Maritime St./ 14th St.	Ü	15.0 0.161	C 21.2 0.818	+ 6.156 D/V
#	5 Maritime St./ 7th St. Extensio	щ	12.7 0.071	B 10.8 0.372	-1.871 D/V
#	6 7th St./ 7th St. Extension	m	12.3 0.009	C 18.9 0.571	+ 6.608 D/V
#	7 Middle Harbor Rd. / Gate 2	М	6.6 0.167	C 15.2 0.689	+ 8.566 D/V
#	8 Adeline St./ 3rd St.	щ	8.7 0.064	E 47.9 0.618	+39.207 D/V
#	9 7th/New Middle Harbor		0.0 0.000	B 9.8 0.313	V/G 008.6 +
#	12 Maritime St./ W.Grand Ave./ I-	æ	12.0 0.242	C 17.8 0.561	+ 5.851 D/V
#	13 Adeline St./ 5th St./ I-880 SB	υ	18.3 0.236	C 20.8 0.731	+ 2.508 D/V
#	14 Union St./ 5th St./ I-880 Nort	Ü	16.4 0.104	C 17.2 0.146	v/a 267.0 +
#	15 7th St./ I-880 NB Ramps / Fron	щ	13.0 0.366	C 21.7 0.576	+ 8.695 D/V
.#	16 7th St./ I-880 SB Ramps	4	0.1 0.020	A 1.4 0.403	+ 1.306 D/V
#	17 14th St./ I-880 Frontage Rd.	ø	2.8 0.000	3,2 0.000	+ 0.000 V/C
#	18 W.Grand Ave./ I-880 Frontage R	Ö	19.9 0.237	C 21.1 0.498	+ 1.220 D/V

B-AM.CMD	Tu	Tue Nov 5, 199	1996 13:06:46	16:46		Page	6-1	B-AM.CMD		Tue	Tue Nov 5, 1996	13:06:46			Page	7-1
	FISCO Minimum M	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	n 2000 um Rail Hour	EIS/EIR 1 Alterna	tive				Mini	FISCO/	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	000 EIS/EIR Rail Altern ur	R		1	! ! ! ! !
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	of Service Computation Report Cons Method (Future Volume Alt.	computat Future	tion Rept Volume ?	ort Alterna)	1	<pre>Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************</pre>	Level Of Service 1994 HCM Operations Method ************************************	Level Of perations ********	E Service Comp ns Method (Fut ************************************	Computation Report (Future Volume Alternative)	port Altern	ative)	**	**
**************************************	100 8 (Y+R = 58	**************************************	***** ritica verage evel of	**************************************	****** ap. (X) sec/veh	* * *	0.285 9.0	#*************************************	ac): 8 (Y	(Y+R =	Criti 4 sec) Avera Level	cal V ge De of S	ol./Cap. (X) lay (sec/veh ervice:	b):	0.818 21.2 C	188 C
######################################	**************************************	South Bound L - T -	ound - R	East L - T	East Bound		ound - R	Approach: Movement:	North Bound L - T -	Ind R	South Bound L - T -		East Bound	- K		ound - R
Control:	Protected Include	 Protected Include	ed de	Prote	Protected Include	- Protected Include	 ted ude	Control: Rights:	Protected Include		Protected Include	<u>-</u>	tted	<u>-</u> !	i g ii	tted
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		0 287	0 0	0 747		000	00	Initial Bse: Added Vol:	0 91 392 167	33	103 261 0 251 1	0 0 140 115	00	0 364	22 0	87
	707		0	0				PasserByVol:		0	0			0;		
Initial Fut:	5 360 0	0 678	224	147 0	1.0	5 0 0	1.00	Initial Fut: User Adi:	392 258 1.00 1.00	39	103 512 1.00 1.00 1.		0 3 1.00 1.	364 1.00 1.	۵.	1.00
	1.00	1.00 1.00	1.00			1.00 1	7	PHF Adj:			1.00	1.00	1.00 1.	-	.00 1.00	1.00
PHF Volume:	5 360 0	0 678	224	147	0 0	00	0 0	FHF Volume: Reduct Vol:	392 298	y 0	0 0	0 0		# O		
Reduced Vol:	360			147		0		Reduced Vol:	392 258		512	115			22 0	
PCE Adj: 1.00	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	00 1.00	0 1.00 1.00	1.00	PCE Adj: MLF Adj:	1.00 1.00	1.00	1.00 1.00 1	1.00 1.00 1	1.00 1.	1.00 1.	1.00 1.00	1.00
1.:	378			147				Final Vol.:	392 271	41	537	_		-		
Saturation Flow Module:	Module:	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	1	1 1 1 1 1 1	1 1 1 1 1 1	-		Saturation F	Flow Module:	=		-	! ! ! ! !)))) (
Sat/Lane: 1900		1900 1900		1900 1900		1900		Sat/Lane:	1900 1900	1900	1900 1900 19	1900 1900	1900 19	1900 19	1900 1900	1900
Adjustment: 0.95	5 1.00 1.00	1.00 0.96	0.50	1.00 0.00	00 1.00	0 0.00 0.00	0.00	Lanes:	1.00 1.74	0.26	1.57	0.24				
Sat.:	3800			1805	0 1615	0	0 0	Final Sat.:	1805 3235	489	1805 2894	792 328	0 10	1040 10	064 0	1615
- a	s Module:	0.00 0.26	0.26	0.08 0.00	00.0 00	00.0 00.0 0	00.00	Capacity Analysis Vol/Sat: 0.22	Modul 0.08	e: 0.08	0.06 0.19 0	0.19 0.35	0.00	0.35 0	0.02 0.00	0.05
Crit Moves: ****	.*	****	0.62	0.20 0.00	0.00 0.20	00.000.00	00.00	Crit Moves: Green/Cycle:	0.27 0.33	0.33						
-	0.21	00.00				00.00	0	Volume/Cap:	0.82 0.26	0.26	0.35 0.82 0	0.82 0.82	0.00 0.	0.51 0.	0.05 0.00	0.13
Level Of Service Module:	Module:	4.9 0.0	6.4	22.9	0.0 20.7	7 0.0 0.0	0.0	Level Of Service Module Delay/Veh: 29.7 15.9	ri vice Module 29.7 15.9	: 15.9	24.2 28.2 20	28.2 22.5	0.0	5.1 1(10.8 0.0	11
	1.00 1	1.00 1	_	1.00		1.00.1	-1	User DelAdj:	1.00 1.00	1.00	1.00	1.00			Η.	
AdjDel/Veh: 26.2	9.7	0.0 6.4		22.9	0.0 20.7	0.0	0.0	AdjDel/Veh:	29.7 15.9	15.9	24.2 28.2 20 3 15	28.2 22.5	0.0	5.1 5	10.8 0.0 0 0	11.2
%nene:	* * * * * * *	*	* * * * * * * *	****	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * *	****	* * * * * * * * * * * * * * * * * * * *	* * * * * *	***	***	****	****	* * * * * *	* * * * * *

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1 1 1 1 1 1 1 1 1 1	Min	FISCO	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	2000] m Rail Hour	EIS/EIR Altern	lative					Σ	FISC inimum)/Port Marine/	t Vision 200 e/Minimum Ra AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	r rnative			1
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of Service 1994 HCM Operations Method ************************************	Level Of perations ************************************	f Service Computation Report ns Method (Future Volume Alt ************************************	mputat uture *****	Computation Report (Future Volume Alternative) ************************************	oort Alterr	ative)	1 * :	* * · · · · · · · · · · · · · · · · ·	Level Of 1994 HCM Operations ************************************	Level Of Service 1994 HCM Operations Method ************************************	1 7 14 * 1	Of Service ons Method ************************************	rel Of Service Comp ations Method (Fut	Service Computation Report Method (Puture Volume Alternative) ************************************	eport	native)	* * *	* + +
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 48	**************************************	(Y+R =	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	****** itical erage] vel Of	Critical Vol./Cap. Average Delay (sec, Level Of Service:	Cap. (x) (sec/veh	() : :h) :	k .	0.372 10.8 B	Cycle (sec): Loss Time (sec): Optimal Cycle:	. 0 1	100 8 (Y+R 68	4,	Critic ec) Averag Level	100 Critical Vol./Cap. (X): 8 (Y+R = 4 sec) Average Delay (sec/veh) 68 Level Of Service:	/Cap. () (sec/veice:	(X): veh):	0.571 18.9 C).571 18.9 C
######################################	**************************************	***** und - R	********** South Bound L - T -]	nd R	East L -	East Bound	R L	× _	West Bound	Approach: Movement:		Bound - R	Sou	South Bound	R LESA	East Bound	-	West Bound	ound
Control: Rights:	 Protected Include	 ed de	 Protected Ovl		Prot	Protected Ovl	<u>-</u>	Protected Include	ted ude	Control: Rights:	Protected Include	otected Include	 	Protected Include	AG	Protected Include	<u>-</u> -	Protected Ov1	ted
Min. Green: Lanes:	10 20 2 0	00	0 0 20	20	10 2 0	0 0	20	000	00	Min. Green: Lanes:	10 20 1 0 1	1 0	10	20	20 10 0 1 0	20 1	0 70	0 70	0 1
Volume Module		-	1 1 1				<u>-</u>		! !	Volume Module	; ; ; ; ; ; ; ;	1 C	-		-		-	96	4.7
Base Vol: Growth Adj:	1.0	1.00	1.00 1.00			1.00 1.	1.00 1.	00 1.00	1.00	Growth Adj:	1.00 1.00	1.0	1.00		1.0			1.0	۲.
Initial Bse: Added Vol:	159 0 310 489	0	0 0 0	334 86	70		37 279			Added Vol:	13	4	463		13	422	29	49	гO
PasserByVol:	0 0	00	0 0	0 0 4 2 0	0	00	316	00	0 0	PasserByVol: Initial Fut:	0 0	0 64 0	463	160	0 0 186 139	4 4 22	0 79	0 0 81 499	577
User Adj:	1.00 1.00	1.00	1.00		1.00 1.			Н		User Adj:			1.00		1.00				
PHF Adj: PHF Volume:	1.00 1.00	1.00	1.00 1.00	1.00 420	1.00 1. 139	1.00 1. 0 3	1.00 1. 316	00 1.00.	0.1	PHF Adj: PHF Volume:	1.00 1.00 73 138	B 49	463	160 1.	186 139	422	1.00 62	1.00 1.00 81 499	577
Reduct Vol:		0 (0 9	0 0		0 5	0 0	0 0	Reduct Vol:	0 0	0 0	0	0 160 1	0 0	0 4	٥ ر	0 0 81 499	577
Reduced Vol: PCE Adi:	1.00 1.00	1.00	1.00 1.00		1.00 1.00		1.00 1.	1.0	1.0	PCE Adj:			1.00		1.00				
MLF Adj: Final Vol .	1.03 1.05	1.00	1.05	1.00	1.03 1.	1.00 1.	316	00 1.00	1.00	MLF Adj: Final Vol.:	1.00 1.05 73 145	5 1.05	1.00	1.00 1. 160 1	1.00 1.00 186 139	1.10 1	1.10 1 68	1.00 1.05 81 524	1.00
	i	· · · ·		=		÷	=			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									
Saturation Flow Module: Sat/Lane: 1900 1900	low Module: 1900 1900	1900	1900 1900		1900 1900		1900 15	1900 1900	1900	Saturation Fl Sat/Lane: Adiustment:	Flow Module: 1900 1900 0.95 0.96	e: 0 1900 6 0.96	1900	1900 19	1900 1900 0.85 0.95	1900	1900	1900 1900	1900
Lanes: Final Sat.:	2.00 2.00 3610 3800	00.0	2.00	1.00						Lanes: Final Sat.:			1.00		1.00			1.00 2.00 1805 3800	1.00
Capacity Analysis Module	 Jysis Modul 0.13 0.14	e: 0.00	0.00 0.15	0.26	0.04 0.	0.00	0.20 0.	00.000.	00.00	Capacity Analysis Vol/Sat: 0.04	Lysis Modul 0.04 0.05	ule: 5 0.05	0.26	0.08 0.0	0.12 0.08	0.10	0.10	0.04 0.14	0.36
<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.36 0.75 0.37 0.18	0.00		0.56	0.17 0.0.24 0.	0.00	0.53 0.	00.0 00.	0.00	Green/Cycle: Volume/Cap:	0.20 0.20 0.21 0.27	0 0.20	00 -	0.39 0.0.21 0.		0.20 0.48 0	0.20 0	0.13 0.21	0.60
Level Of Service Module: Delay/Veh: 15.4 2.3	 vice Module 15.4 2.3	0.0	0.0 14.0	8.7	23.4 0	0.0 9	9.1	0.0 0.0	0.0	Level Of Service Module Delay/Veh: 21.7 21.9 User DelAdj: 1.00 1.00	rice Module 21.7 21.9 1.00 1.00	le: 9 21.9 0 1.00	17.6	12.9 13 1.00 1.	13.4 32.1 1.00 1.00	23.1 2	23.1 2 1.00 1	26.1 24.7 1.00 1.00	8.7
AdjDel/Veh:	15.4 2.3	0.0			23.4 0			l		AdjDel/Veh:	21.7 21.9		17.6		32.1			26.1 24.7 2 14	
Queue: 10 4 0 0 11 7 3 0 5	10 4	0	0 11	7	m	0	Ŋ	0	0	Önene:	7	3	11	m	4		.	1 2	1 2 2 14

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B-AM.CMD	Đ	Tue Nov 5, 1996	6 13:06:4)6:46		Page	10-1	B-AM.CMD		Tue	Tue Nov 5, 19	1996 13:	13:06:46		Page 11	1-1
	FISC	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	n Rail Hour	EIS/EIR ! Alternati	ive				Min	FISCO/Port imum Marine/	Port Vision 200 rine/Minimum Ra AM Peak Hour	n 2000 um Rai Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Winimum Rail Alternative AM Peak Hour			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Level Of Service 1994 HCM Operations Method ************************************	rvice sthod *****	omputat Suture	Computation Report (Future Volume Alternative	:ernat:	(Ae)	* * * * * * * * *	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	1994 HCM OF	Level Of perations *******	Level Of Service C Operations Method (************************************	Computa Future	Computation Report (Future Volume Alternative)	ernativ	* ; * ;	
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 : 0 (Y+R = 73	Cr = 4 sec) Av Le	itical erage vel Of	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	(X):			Cycle (sec): Loss Time (sec) Optimal Cycle:	100 ec): 12 e: 92	100 12 (Y+R = 92	4 sec) P	Critical Average I Level Of	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): /veh):	0.618 47.9 E	. со съ 1
Approach: Movement:	Vorth Bound	South Bound East Bound L - T - R L - T - R	ind R	East Bound L - T -	ound - R		ound - R	Approach: Movement:	North L -	und - R	South Bound	und - R	South Bound East Bound	und - R	West Bound	und - R
1	rotected Include	Prote	}	rot	٠	i i i i	l	Control: Rights:	1 1 1	lase Ide	44	ase de	1 4 4	ase de	1 1 1	ase de
Min. Green: Lanes:	10 0 20 0 0 0 1		00	0 0 1 70	1 0 1	10 20	° °	Min. Green: Lanes:	10 20	1 0 0	10 20	0 70	10 0 1 0	1 0 7	0 1 0	0 70
Volume Module:		-		; ; ; ; ; ;		<u> </u>	-	Volume Module				-		-		-
Base Vol:		0 0				208	0 0	Base Vol:	•	31	•	56		53	,	56
Growth Adj: 1. Initial Bse:	1.00 1.00 1.00 53 0 45	0 1.00	0 0	0 1.00	39	-	00.1	Growth Adj: Initial Bse:	00.1 00.1 8 0	31	26 0	1.00	1.00 1.00 B 6	1.00	50 59	7.00 26
	1 0 207	00	0 0	0 202	8 5	300 271	0 0	Added Vol:	0 700	0 0	996 0	0 0	00	00	00	0 0
Initial Fut: 1			0	2	_	9	. 0		70	31	96	5 2	o vo	29	ຜ	56
		1.00 1.00		-			1.00	User Adj:		1.00		1.00	7	1.00	Т	1.00
PHF Adj: 1.	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00 614 609	1.00	PHF Adj: PHF Volume:	1.00 1.00 8 700	31	1.00 1.00 26 966	1.00	1.00 1.00 8 6	1.00	1.00 1.00	1.00
	0	0	0		0		0	Reduct Vol:		0		0	0	0		0
701:		0	0	0 202	118	614	0	Reduced Vol:	8 700	31		26				26
PCE Adj: 1.	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	PCE Adj: MLF Adi:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00
1.:		0	0			614	0	Final Vol.:		33		27		53		23
Caturation of Com							: : : : : : : : : : : : : : : : : : : :	Saturation Flow Module	 ow Module.			!				!
4	1900 1900 1900	1900 1900	1900	1900 1900	1900	1900 1900	1900	Sat/Lane:	1900 1900	1900	1900 1900	1900		1900	1900 1900	1900
ment:	1.00	1.00 1.00	1.00	1.00 0.94		0.95 1.00	1.00	Adjustment:	0.99 0.99	66.0	1.00 1.00	1.00	76.0 76.0	0.85	0.94 0.94	0.94
Final Sat.: 18	1805 0 1615	0 0 0	0	0.00 1.28	1314		0	Final Sat.:		160		96		1615		1212
											1 1 1 1 1 1 1 1		1 1 1 1 1 1 1 1 1 1			
Capacity Analysis Module Vol/Sat: 0.09 0.00 Crit Moves:	ysis Module: 0.09 0.00 0.25	0.00 00.00	0.00	0.00 00.0	0.09	0.34 0.17	00.00	Capacity Analysis Vol/Sat: 0.21 Crit Moves:	Lysis Modul 0.21 0.21 ****	.e: 0.21	0.28 0.28	0.28	0.01 0.01	0.02	0.05 0.05	0.05
	00.0	0.00 0.00	00.0	0.00 0.20		0.46	00.00	Green/Cycle:		0.20	.28	0.28				0.20
Volume/Cap: 0.	0.26 0.00 0.74	0.00 0.00	0.00	0.00 0.47	0.47	0.74 0.26	00.00	Volume/Cap:	1.02 1.02	1.02	1.02 1.02	1.02	0.04 0.04	0.09	0.24 0.24	0.24
Level Of Service Module:	rice Module:			0 0 0 23 0		 	- c	Level Of Service Module	, vice Module 54 6 54 6	:: 5.45	48 4 48	484	20.8.20.8	21.1	8 21 8	- 8.12
	1.00	1.00 1.00	1.00	1.00 1.00		1.00 1	1.00	User DelAdj:		1.00	00.	1.00				1.00
	0.0	0.0 0.0	0.0	0.0 23.2		Τ.	0.0	AdjDel/Veh:		54.6		48.4	20.8 20.8			21.8
Queue: 3 0	3 0 11	0 0	0 ***	4********	۸ * * * * *	TP TT TT TT TT TT TT TT TT TT TT TT TT T	***	Queue:	1 28	7 * * * * *	2 38	7 *****	********	****	T T	T * * * * *

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Tue Nov 5, 1996 13:06:46 Page 12. FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour
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West Bound - T -
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	FISCO Minimum M	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	2000 EI Rail A our	IS/EIR Alternat:	ive				FI	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Altern AM Peak Hour	t Vision 200 e/Minimum Ra: AM Peak Hour	FISCO/Port Vision 2000 BIS/BIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	ov.	1	1 1 † 1 1 1
1994 ncm Operations method (included ordered) ************************************	Level Of Service 1994 HCM Operations Method ************************************	Level Of Service Computation Report perations Method (Future Volume All **********************************	putatio ture Vo ******	Computation Report (Future Volume Alternative)		! * ! *		**************************************		Level Of Service Computation Rep CM Operations Method (Future Volume . ************************************	e Computation (Future ************************************	Service Computation Report Method (Future Volume Alternative) ************************************	ernativ	****	* * *
**************************************	100 12 (Y+R:88	**************************************	***** tical V rage De	**************************************	(X): c/veh):	**************************************	* * # & D	Cycle (sec): Loss Time (sec): Optimal Cycle:	: ;	R = 4 se	Critica 4 sec) Average Level	Critical Vol./Cap. (X): Average Delay (scc/veh) Level Of Service:	(X): :/veh):	0.146 17.2 C	17.2 C C
**************************************	**************************************	South Bound L - T - 1	id R L	East Bound	ound - R		Bound	Approach: Movement:	North Bound L - T -	-	South Bound	East Bound	ound - R	West Bound L - T -	ound - R
-	Protected	 Protected	 	Split Phase	hase	Split Phase	185e 196e	Control:	Protected Include	 Prot In	Protected Include	Split Phase Include	nase ide	Split Phase Include	hase
Kignus: Min. Green: 10 Lanes: 1	0	10 20	20	01	1 0	10 20	20	Min. Green: Lanes:		20 0	20 20 1 1 0	100	1 00	10 20 1 0 1	1 20
Volume Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		'-	;		}	1 1	Volume Module		; ; ;				1000	
Base Vol: 0 Growth Adj: 1.00	0 0 0 1.00 1.00 1.00	72 109 1.00 1.00 1		H	1.0			Base Vol: Growth Adj:	1.00	1.00	Η.	1.00 1.		Ä	-
Initial Bse: 0	0 0 0	72 109	165 2	256 51 0 0	207	0 169	364 0	Initial Bse: Added Vol:	0 175 0	45 0 1 207 0	154 31 0 0	24 43	13	205 31 125 0	115
1:	0	0		•		0		PasserByVol:	0 1	0 0	0 0 0	0 7	0 .	0 0	0 1 0
Initial Fut: 125 User Adi: 1.00	123 451	72 298 1.00 1.00 1		256 51 1.00 1.00	1.00	1.00 1.00	364 0.50	initiai fut: User Adj:	1.00	1.00		1.00	1.00	1.00 1.00	
	1.00			1.00 1.00		1.00 1.00		PHF Adj:	1.00 1.00 1.	1.00 1.00 1.	1.00 1.00	1.00 1.00	1.00	330 31	1.00
Reduct Vol: 0	123 451	0 0	7 O			0		Reduct Vol:	0	0		0	0		
0]:	123	298		256 51		6		Reduced Vol:	175	0 6	154 31	1 00 1 00	13	330 31	115
PCE Adj: 1.00	1.00 1.00	1.00 1.00 1	1.00 1.	1.00 1.00	1.00	1.00 1.00	1.00	PUE AGJ: MLF AGJ:	1.00 1.10 1.		1.05 1.05	1.05	1.05	1.00 1.00	
:	123	313	-			σ,		Final Vol.:	193	278 0 1	162 33	25 45	14	330 31	115
Saturation Flow Module: Sat/Lane: 1900 1900	ow Module:	1900 1900	1900 19	1900 1900	1900	1900 1900	1900	Saturation F Sat/Lane: Adjustment:	Flow Module: 1900 1900 19	1900 1900 1900 0.91 0.00 1.00 0.00 1.00 0.00 0	1900 1900 0.97 0.97	1900 1900 0.96 0.96	1900	1900 1900 0.95 1.00	
	1.00	1.29		1.66 0.34 2997 568				Lanes: Final Sat.:	1.23				608		
LB	Module:	0.04 0.13	0.13 0.	0.09 0.09	0.12	0.32 0.11	0.11	Capacity Analysis Vol/Sat: 0.00	Module:	0 00.0 60.	0.05 0.05	0.02 0.02	0.02	0.18 0.02	2 0.07
Cric moves: **** Green/Cycle: 0.10 Volume/Cap: 0.69	0.20 0.58		0.20 0.	0.20 0.20 0.45 0.45		0.83 0.28	0.38	Green/Cycle: Volume/Cap:	0.00 0.23	0.23 0.00 0	0.23 0.23	0.20 0.20 0.12 0.12	0.20	0.46 0.46	0.15
Level Of Service Module: Delay/Veh: 35.4 22.1 8.2 28.0 25.6 USer DelAdj: 1.00 1.00 1.00 1.00 AdjDel/Veh: 35.4 22.1 8.2 28.0 25.6 Queue: 4 3 7 2 8	ice Module: 35.4 22.1 8.2 1.00 1.00 1.00 35.4 22.1 8.2		25.6 22 1.00 1. 25.6 25	22.9 22.9 1.00 1.00 22.9 22.9 7 1	24.6 1.00 24.6 24.6	24.0 13.9 1.00 1.00 24.0 13.9 16 3	13.9	Level Of Servel of Servel	vice Module: 0.0 21.2 1.00 1.00 0.0 21.2 0 5	21.2 0.0 2 1.00 1.00 1 21.2 0.0 2 7 7 0	20.3 20.3 1.00 1.00 20.3 20.3 4 1	21.2 21.2 1.00 1.00 21.2 21.2 1 1	21.2	11.7 9.5 1.00 1.00 11.7 9.5 6 0	5 10.1 5 1.00 5 1.00 0 2

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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FI Winimu	ISCO/P	ort Vi ine/Mi AM P	t Vision 2000 le/Minimum Ra: AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	EIR	, , , ,	1 1 1 1 1 1 1 1	1 1 1 1 1			æ	FISC	J/Port Marine/	FISCO/Port Vision 200 mum Marine/Minimum Ra AM Peak Hour	2000 E Rail	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	e A			!
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.	tions ***** I-880	Servic Metho	e Comp d (Fut *****	Level Of Service Computation Report perations Method (Future Volume Alt t./ I-880 NB Ramps / Frontage Rd.	Report	ernati	· ^ * *		* * * *	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	1994 HCM C	Level Of Service Operations Method	ol Of Servations Met	Service Com	nputati nture V	Computation Report ***********************************	ernati ¹ *******	* *	* * * * * * * * * * * * * * * * * * * *	* *
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 ec): 10 (Y	100 10 (Y+R = 70	4 sec	Critic) Averag Level	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	./Cap. y (sec vice:	(X): /veh):		0.576 21.7 C		Cycle (sec): Loss Time (sec): Optimal Cycle:	: 100 Sec): 5 (Y Le: 35	100 5 (Y+R 35	4.	Crition (4 sec) Avera	Critical Vol./ Average Delay Level Of Servi	Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	Cap. (X): (sec/veh): ce:	,	0.403 1.4 A	•
**************************************	**************************************	* * *	South	South Bound	******* Id E R L	******* East Bound - T -	und - R	٦	West Bound		Approach: Movement:	. z	Bound - R	Sou	South Bound		East Bound L - T -	und - R	West	West Bound	- A
Control:	 Protected Include	-	Protect Ov1	Protected Ovl		Protected Include	 ed de	 Proi	Protected Include		Control: Rights:	-	otected Include	 P1	Protected Include		Protected Include	 de de	Frre Prot In	Protected Include	; ;
Min. Green: Lanes:	10 20 2 0 0 1	0 50	10	20 0	20 10	7 70	0 0 0	0	20	0 70	Min. Green: Lanes:	°° .	° 0	。°	000	00	0 20	0 1 0	7 7 0	0 0 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0 70
Volume Module		<u>-</u> 			<u>-</u>	1	- - - -	<u> </u>		- -	Volume Module:					<u>-</u>					
Base Vol: Growth Adj:	1.00		1.00 1.	00 1.		-i	1.00	1.00 1	1 00 1	1.00	Growth Adj:	1.00 1.0	1.0	1.0	1.00		1.00 1.00	1.00			1.00
Initial Bse: Added Vol:	0 548 679 0	21	1.7 0	м 0 с	94 U 379 332	13	0	0	13	10	Added Vol:	•		0	00	0	34	583		1077	00
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User Adj:			1.00 1.00			1.00 1.00	1.00			1.00	User Adj:	п,		1.00	1.00	1.00 1	1.00 1.00	1.00	1.00 1.	1.00	1.00
PHF Adj: PHF Volume:	1.00 1.00 1. 679 548	1.00 1	1.00 1.00 17 0		1.00 1.00 473 332	1.00	1.00	1.00 1	.00. 81		FHF Adj: PHF Volume:		0.1.0	4		•		589			30
Reduct Vol:	0 0	0 5	9 5	0 0	0 0	0 0	0 0	00	0 6	0 -	Reduct Vol:	00	0 0	00	00	00	0 0 0	589	65 10	0 1077	00
reduced vol:	1.00		1.00 1.00			1.00	1.00	1-1	: 8 :	1.00	PCE Adj:	1.00 1.00			1.00			1.00	80.		1.00
MLF Adj: Final Vol.:	1.03 1.00 1. 699 548	1.00 1	1.00 1.00		1.13 1.00 534 332	1.05	1.00	1.00 1	.05 85	1.05	MLF Adj: Final Vol.:	00.1.00	00.1.00	00.1	0.1	† 00.1	1.00 1.05 0 362	1.00 589		1131	0.1
Saturation Flow Module:	•		1900 1900	1	0061 0061	1900	1900	1900 1	1900 1	1900	Saturation E	Flow Module:	e: 0 1900	1900	1900	1 0061	1900 1900	1900	61 0061	1900 19	1900
Adjustment: Lanes:			0.95 1.				1.00	1.00		1.00	Adjustment: Lanes:	1.00 1.00	0 1.00	1.00	1.00	1.00 1	1.00 1.00 0.00 0.00 2.00	0.85	0.95 1. 2.00 2.	2.00 0.	1.00
Final Sat.:	1812		1805		_	3800	0	0	3756	44	Final Sat.:	0	0 0	0	0	0	0 3800	1615	3610 38	3800	o <u>-</u>
Capacity Ana Vol/Sat:		0.30 0		0.00.0	0.17 0.18	3 0.01	00.00	0.00.0		0.02	Capacity Analysis Vol/Sat: 0.00	alysis Module	ule: 0 0.00	00.00	0.00	0 00.0	0.00 00.00	0.36	0.02 0.	0.30 0.	- 00.0
<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	**** 0.27 0.37 0.71 0.81	* 0.37 0 0.81 0	0.10 0.00 0.09 0.00		**** 0.43 0.23 0.39 0.81	3 0.43	0.00	0.00	0.20 0	0.20	Crit Moves: Green/Cycle: Volume/Cap:	0.00 0.00	00.00	0.00	0.00	0.00.0	0.00 0.85	0.85		0.95 0.0.31 0.	00.00
Level Of Service Module Delay/veh: 22.8 23.2 User DelAdj: 1.00 1.00 AdjDel/veh: 22.8 23.2 Queue: 18 15		23.2 2 1.00 1 23.2 2	26.4 0.0 1.00 1.00 26.4 0.0	0.0 12	12.8 31.7 1.00 1.00 12.8 31.7 10 10	31.7 10.7 1.00 1.00 31.7 10.7	0.0	0.00	21.2 2 21.2 2 21.2 2	21.2	Level Of Ser Delay/Veh: User Deladj AdjDel/Veh: Queue:	Service Module: 1: 0.0 0.0 1: 0.0 1.00 1: 0.0 0.0 1: 0.0 0.0	1e: 0.0	0.0	1.00 0.0 0.0	1.00 1	0.0 0.8 1.00 1.00 0.0 0.8	1.3	26.7 0 1.00 1. 26.7 0	0.1 0 1.00 1. 0.1 0	1.00
****	女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女女	****	~ * * * * * *	****	****	****	***	***	* * * * *	* * * *	***	***	*	# # #	* * * * * * * * * * * * * * * * * * * *			*			: : :

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Figure Company Compa	PISCO/Port Vision 2000 BIS/EIR PISCO/Port Vision 2000 BIS/EIR PISCO/Port Vision 2000 BIS/EIR PISCO/Port Vision 2000 BIS/EIR PISCO/Port Vision 2000 BIS/EIR PISCO B	B-AM.CMD Tue Nov 5	5, 1996 13:06:46	Page 18-1	B-AM.CMD	Tu	Tue Nov 5, 1996 13	13:06:46	Page	19-1
1994 MCM Operations Method (Puture Optimes Alternative) 1994 MCM Operations Method (Puture Optimes Alternative) 1994 MCM Operations Method (Puture Optimes Alternative) 1994 MCM Operations Method (Puture Optimes Alternative) 1994 MCM Operations Method (Puture Optimes Alternative) 1994 MCM Operations Method (Puture Optimes Alternative) 1994 MCM Operations Method (Puture Optimes Alternative) 1994 MCM Operations Method (Puture Optimes Alternative) 1994 MCM Operations More Medical Man. Green; 10 10 10 10 10 10 10 10 10 10 10 10 10	1994 HCM Operations Nethod (PRILLE FOLIAGE RATE) 1994 HCM Operations Nethod (PRILLE FOLIAGE RATE) 100	FISCO/Port Winimum Marine/PAMINE/PAMI	Vision 2000 EIS/EIR Minimum Rail Alternative Peak Hour			FISCO Minimum M	/Port Vision 200 arine/Minimum Ra AM Peak Hour	0 EIS/EIR il Alternative		
Cycle (sec): 11 Y+R = 4 sec) Average Daily (sec/vah): 21.1 1.0	Cycle (sec): 100 Critical Vol./Cap. (X): 0.499 Cycle (sec): 11 (Y+R = 4 sec) Critical Vol./Cap. (X): 0.499 Cycle (sec): 11 (Y+R = 4 sec) Critical Vol./Cap. (X): 0.499 Cyclimal Cycle: 81 Lawel Cof Service: 7. Movement: Lawel Cof Service: 1 Lawel Cof Service: 1 Coloration Cycle C	Level Of Servi 1994 HCM Unsignalized Met ************************************	ice Computation Report thod (Future Volume Alternati	ve)	**************************************	Level O 994 HCM Operatio ************************************	f Service Comput ns Method (Futur / I-880 Frontage	ation Report e Volume Alterna Rd.	ive)	* * *
		**************************************	**************************************	Service: C	Cycle (sec): Loss Time (se	100 c): 11 (Y+R	Critic = 4 sec) Averag	al Vol./Cap. (X) e Delay (sec/vel		498
		Approach: North Bound Sout	th Bound East Bound	West Bound	Optimal Cycle	81	Level ***********************************	Servi	* * * *	* * * * * * * * * * * * * * * * * * *
Uncontrolled Uncontrolled Stopp Stagn	Uncontrolled Uncontrolled Stopp Signs				Approach:	North Bound	South Bound	East Bound	. •	Bound
1	1	Uncontrolled Include	Stop Sign Include	Stop Sign Include	Movement:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	=	
Name Name	National Color Nati	T 0 T T 0 0			Rights:	Spiic fnase Include	Include	Include	u	clude
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	- 6		c	Min. Green:	20	10 20	10 20	10	
89 30 79 0 0 0 0 0 140 0 0 6 Growth Addition 9 0 678 48 6 65 234 12 0 120 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	89 30 90 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 1.00 1.00	.00 1.00 1.00 1.00	0 1.00 1			1 5 1 1 1 1			
1.00 1.00	100 1.00 1	68 0 0	0 0 0	00	Volume Module	c	α.	65 234	c	
100 101	10 10 10 10 10 10 10 10	0 332 0			Growth Adi:	1.00	1.00	1.00 1.00	1.00	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00	0 332 89	379 0 0 0		Initial Bse:	0	48	65 234	0	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00	0 1.00	Added Vol:	212	239	0	140	
10	Strain S	1.00 1.00 1.00	1.00 1.00 1.00 1.00	0 1.00	PasserByVol:	0 6	0 [0 0	0 ;	
State Stat	State Stat	0 332 89	379 0 0 0	0 0	Initial Fut: Heer Adi.	777	/87	1 00 1 00	1.00	
PHT VOIDING: 9 212 120 678 287 6 65 353 12 140 288 PHT VOIDING: 9 212 120 678 287 6 65 353 12 140 288 Reduct VOI: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Description Description	0 0 0		00	PHF Adj:	1.00	1.00	1.00 1.00	1.00	
Secure of the color of the co	Secured Vol. 0	<u>}</u>			PHF Volume:	212	287	65 353	140	
Name	NEW COLOR 1.00 1.	Grade: 0*		*0	Reduct Vol:	0	0	0	0	
Name	NEW NEW NEW NEW NEW NEW NEW NEW NEW NEW	XXXX XXXX	XXXX		Reduced Vol:	212	287	65 353	140	
Saturation Fig. 1.00 1.00	National Control Con	XXXX XXXX		XXXX	Mrs Adj:	00.1	00.1	1.00 1.00	00.1	
Statistics Sta	Satisfaction Flow Module:	1.10 1.00 1.00		0 1.10	Mur Adj: Final Vol.	222	287	65 371	140	
Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow 1900 1900 1900 1900 1900 1900 1900 190	Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Saturation Flo	XXXX					- ;	1 1 1 1 1		i
2.1 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx	2.1 xxxx xxxxx xxxxx xxxxx xxxxx xxxx xx	0 332 89 33	379 0 0 0	4 0	Saturation Fl	ow Module:	_	<u> </u>	-	•
2.1 xxxx xxxxx xxxxx xxxxx	2.1 xxxxx xxxxx xxxxx xxxxx 7.0 xxxx 2.6 Adjustment: 0.95 0.95 0.95 0.95 1.00 1.00 0.95 0.91 5.5 xxxx xxxxx xxxxx xxxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 7.0 xxxx 2.0 xxx 2.0 xxx 2.0 xxx 2.0 xxxx 2.0 xx 2.0 xxx				Sat/Lane:	1900	1900	1900 1900	1900	
5.5 xxxx xxxxx xxxx xxxx xxxx xxxx xxxx			XXXX XXXX XXXXX XXXX	4 xxxx	Adjustment:	0.95	1.00	0.95 1.00	0.95	
421 XXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX	#21 XXXX XXXXX XXXX XXXX XXXX XXXX XXXX	:	XXXX XXXX XXXXX XXXX	7.0 xxxx	Lanes:	1.28	96.0	1.00 1.93	1000	
421 XXXX XXXXX XXXXX XXXXX 1083	421 xxxx xxxxx xxxxx xxxxx xxxxx 1083	Canadity Modules)) ! ! !		Fillal Sate:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				- 1
1019 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx	1019 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx			5 xxxx	Capacity Anal		-	-		•
Crit Moves:	xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx			3 xxxx	Vol/Sat:	0.10	.20 0.15	0.04 0.10	0.08	
Second Color	xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx	xxxx xxxx xxxx	XXXXX	7 xxxx	Crit Moves:	* * *	* * *	* * *		
Volume/Cap: 0.02 0.48 0.60 0.47 0.36 0.42 0.64 0.60 0.40 0.60 0.40 0.36 0.42 0.64 0.60 0.40 0.60 0.40 0.40 0.40 0.60 0.40 0.60 0.40 0.4	Volume/Cap: 0.02 0.48 0.60 0.47 0.36 0.42 0.64 0.60	XXXXX XXXXX XXXXX		2 xxxx	Green/Cycle:	0.20	0.33	0.10 0.24	0.12	
3.6 xxxx xxxxx xxxxx xxxxx 19.7 xxxx 3.3 Level Of Service Module: A * * * * C * * A Delay/Veh: 20.8 23.3 23.3 18.5 17.3 17.3 27.7 20.9 20.9 31.5 21.5 LT - LTR - RT LT - LTR - RT USE Delay/Veh: 20.8 23.3 23.3 18.5 17.3 17.3 27.7 20.9 20.9 31.5 21.5 xxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx	3.6 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Volume/Cap:	0.48	0.47	0.36 0.42	0.64	
3.6 xxxx xxxxx xxxxx xxxxx 19.7 xxxx 3.3 Level OI Service Module: A * * * * C * A Delay/Veh: 20.8 23.3 23.3 18.5 17.3 17.3 27.7 20.9 20.9 31.5 21.5 LT - LTR - RT LT - LTR - RT LT - LTR - RT U User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	3.6 xxxx xxxxx xxxxx xxxxx 19.7 xxxx 3.3 Level OI Service Module: A * * * * * * C * * A Delay/veh: 20.8 23.3 23.3 18.5 17.3 27.7 20.9 20.9 31.5 21.5 LT - LTR - RT LT - LTR - RT LT - LTR USER Delay/veh: 20.8 23.3 23.3 18.5 17.3 27.7 20.9 20.9 31.5 21.5 XXXX XXXX XXXX XXXX XXXX XXXX XXXX X						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
LT - LTR - RT LT - LTR - RT LT - LTR - RT USer DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	LT - LTR - RT LT - LTR - RT LT - LTR - RT USER DOWNING 33.3 18.5 17.3 17.3 27.7 20.9 31.5 21.5 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx		XXXX XXXX XXXXX XXXX	, xxxx	Level Of Serv	Ü	,	0 00 0	7	
LT - LTR - KT LT - LTR - LTR - KT LT - LTR - KT LT - LTR - KT LT - LTR - KT LT - LTR - KT LT - LTR - KT LT - LTR - KT LT - LTR - KT LT - LTR - KT LTR - LTR - KT LTR - KT LTR - LTR - KT LTR - LTR - KT LTR - LTR - KT LTR - LTR - KT LTR - LTR - LTR - KT LTR - LTR - LTR - KT LTR - LTR	LT - LTR - RT - RT	4	* [neray/ven:		7.6			
xxxx xxxxx	xxxx xxxxx	LT - LTR - RT LT	- RT LT LT	ייוא	USEL DELAGJ:	7.00	17.00	27 7 20 9		
**************************************	* * **********************************	Shared Cap.: xxxx xxxx xxxx xxxx	XXXX XXXX XXXX XXXX XXXX	XXX	Aujber/ven:	2.5	· ·		4	
0.0 0.3 0.0 19.0	0.0 0.0 0.3 0.0 19.0 nowling Assoc. Licensed to Dowling Assoc., Oakland	Shrd StpDel:xxxxx xxxx xxxxx xxxxx	* * * * * * *	*	********	**********	************	************	********	********
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	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	EIS/EIR 1 Alternat:	ive			;		FISCO/Pc Minimum Mari	FISCO/Port Vision 2000 EIS/BIR Minimum Marine/Winimum Rail Altern	0 EIS/EIR il Alternative	tive	1		
	Trip Generation Report	port							FM Feak nour	-	; .			
	Forecast for PM Peak Hour	k Hour					zone # Subzone	Amount Units	Rate In	Rate Out	Trıps In	Trips Out	Total a	% Of Total
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# Subzone	Amount Units In	Out	ei O	Out	Trips T	Total	Zone 23	3 Subtotal		:	161	193	354	7.6
		i					24 SP Rail Term		External 144.00	00 172.00	144	172	316	6.8
I New Harbor	391.00 Employees 0.06 Subtotal	27.0	23	9 8	109	2.3	Zone 24	4 Subtotai			144	172	316	9.
2 Hrbr Trns Ct	t 400.00 Employees 0.06	6 0.21	24	84	108	2.3	25 UP Rail Term Zone 25	m 1.00 Truck External 5 Subtotal	External 48.00	00 58.00	4 4 8 8	58	106	2 2 .3
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3 J.I.T. Zone 3	167.00 Employees 0.10 Subtotal	0 0.36	17	09	77	1.7	26 Middle Harbr Zone 26	1.00 Truck Subtotal	External 244.00	00 293.00	244 244	293	537	11.5
4 SP Rail Term	150.00	0 0.36	15	5.4 4.4	69	7. F.	27 7th St Harbr Zone 27	1.00 Truck Subtotal	External 290.00	00 348.00	290	348 348	638	13.7
5 UP Rail Term Zone 5 (il Term 67.00 Employees 0.10 Zone 5 Subtotal	: ;		2 2 2 4 4 4	31	0.7	28 Outer Harbor Zone 28	1.00 Truck Subtotal	External 375.00	00 449.00	375 375	449 449	824 824	17.7
6 Middle Harbr Zone 6	e Harbr 516.00 Employees 0.06 Zone 6 Subtotal	6 0.22	31	114 114	145 145	3.1 3.1	TOTAL				. 1888	2762	4650 1	100.0
7 7th St Harbr Zone 7	t Harbr 613.00 Employees 0.06 Zone 7 Subtotal	6 0.22	37	135 135	172 172	3.7								
8 Outer Harbor Zone 8	or 792.00 Employees 0.06 8 Subtotal	6 0.21	4 4 8 8	166 166	214	4.6 6.4								
10 New Park Zone 10	1.00 Total Trips 16.00 5 Subtotal	0 38.00	16	38	54	1.2 1.2								
11 New Harbor Zone 11	1.00 Trucks Inter 38.00 1 Subtotal	0 45.00	38	45	83	1.8 1.8								
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Page 4-4		•	415 240	278 -3 308 3	-741 -1 829 1	61 14	.16 18 2	ν rv O	ر د د	-283 314 31	-391 433 42
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s,	t Visi e/Mini PM Pea	ink Total	-1043 1178 135	-741 829 88	000	-19 15 4-	-70 75 8	70 75 5	-37 40 3	ı	-16 18 2
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5, 199	t Vision 200 e/Minimum Ra PM Peak Hour	k otal	000	000	-105 114 9	-126 105 -21	-205 186 -19	-214 244 30	-439 481 42	-736 808 72	000
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B-PM.CMD		Volume Type I	#159 Base -2 Added 3 Total	#160 Base Added Total	#161 Base Added Total	#165 Base Added Total	#170 Base -5 Added 6 Total	#177 Base Added Total	#178 Base -3 Added 3 Total	#182 Base -4 Added 4 Total	#201 Base Added Total

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5-1		1 1 6 1 1	Change in	2.848 D/V	6.369 D/V	6.247 D/V	+14.262 D/V	+ 7.150 D/V	+26.342 D/V	-6.172 D/V	+ 6.603 D/V	+ 3.404 D/V	3.749 D/V	6.671 D/V	W/U 901 8 +
Page	1 	! ! ! !	윤	+ 2.8	+ 6.3	+ 6.2	+14.2	+ 7.1	+26.3	-6.1	9.9+	+ 3.4	+ 3.7	+ 6.6	
	tive	 	Future Del/ V/	10.0 0.3	22.3 0.831	12.0 0.375	20.1 0.585	20.6 0.803	46.7 0.618	9.7 0.321	19.0 0.440	21.0 0.577	16.2 0.205	18.1 0.400	0 7 7 9 9 9
v 5, 1996 12:31:20	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	Impact Analysis Report Level Of Service	Base Del/ V/	0.211	C 15.9 0.392 C	io B 5.8 0.080 B	B 5.8 0.018 C	B 13.5 0.296 C	C 20.4 0.084 E	C 15.8 0.000 B	I- B 12.4 0.237 C	3B C 17.6 0.328 C	rt B 12.5 0.178 C	on B 11.5 0.135 C	ם בור ט א כי
Tue Nov 5,	FISCO/Port Minimum Marine	Impact		3 Maritime St./ Burma St.	4 Maritime St./ 14th St.	5 Maritime St./ 7th St. Extensio	7th St./ 7th St. Extension	7 Middle Harbor Rd. / Gate 2	8 Adeline St./ 3rd St.	7th/New Middle Harbor	12 Maritime St./ W.Grand Ave./ I	13 Adeline St./ 5th St./ I-880 SB	14 Union St./ 5th St./ I-880 Nort	7th St./ I-880 NB Ramps / Fron	# 16 7th St / T.980 SD Dempo
B-PM.CMD			Intersection	# 3 Maritime	# 4 Maritime	# 5 Maritime	# 6 7th St./	# 7 Middle Ha	# 8 Adeline S	# 9 7th/New N	# 12 Maritime	# 13 Adeline S	# 14 Union St.	# 15 7th St./	/ +2 4+2 2+ #
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Page 4-5		nk Total Total Volume	5	199	118										
1		WB Link Out To	7	108	0 4										
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B-PM.CMD		Volume Type	#244	Added	Total										

2.2 0.000 + 0.000 V/C C 21.9 0.652 + 0.828 D/V

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1.9 0.000

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17 14th St./ I-880 Frontage Rd.

18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505

B-PM.CMD	H	Tue Nov 5, 1996	6 12:31:20	1:20	; ;		Page 6	-1	B-PM.CMD		Tue	Tue Nov 5, 1	996 12:	12:31:20			Page	e 7-1
	FISC Minimum	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	m Rail Hour	EIS/EIR Alterna	tive					Minin	risco/l	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	on 2000 mum Rai k Hour	EIS/E	R			
**************************************	<pre>Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************</pre>	Of Service Computation Report ons Method (Future Volume Alt ************************************	mputati uture (Computation Report (Future Volume Alternative ************************************	rt ilterna *****	* † 0 * †	* * * * * * * * * * * * * * * * * * * *	*	Level Of Service 1994 HCM Operations Method ************************************	Le 1994 HCM Ope: ************************************	Level Of perations *******	u m # • :	Computa (Future	Computation Report (Future Volume Alt	Computation Report (Future Volume Alternative)	native)	*	# # # # # # # # # # # # # # # # # # #
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 ec): 8 (Y+R =	Cr Cr (= 4 sec) Av	Critical Average I Level Of	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	p. (x)	t t	0.320 10.0		Cycle (sec): Loss Time (sec) Optimal Cycle:	100 2c): 8	(Y+R =	4 sec)	Critica Average Level C	Critical Vol./Cap. Average Delay (sec Level Of Service:	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	() : eh) :	0.831 22.3 C	0.831 22.3 C
**************************************	######################################	**************************************	nd R	****** East E	******** East Bound	* ' i	********** West Bound - T - R	 ind R	**************************************	North Bound L - T - R	* -	**************************************	****** ound - R	* * * * * · · · · · · · · · · · · · · ·	******* East Bound " T -	* H	*	**************************************
Control: Rights:	rotected Include	 Prot Ir	1	: 14	•	<u>:</u>	Protected Include		Control: Rights:	i g H	1	Protected Include	1		Permitted Ovl	<u>-</u>	Perm	Permitted Include
Min. Green: Lanes:	10 20 20 1 0 1 1 0	10 20	0 0	10 2	20 20 0 1 0	。 。	000	° °	Min. Green: Lanes:	10 20	0 70	10 20 1 0 1	0 70	0 0	20 11 0	70 70	10 20 0 0	1 20
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Initial Bse:	590	0 0			0 50		0 0	0 0	Initial Bse:					0 ;				
Added Vol: PasserByVol:	0 362 0	0 230	122	102	. 0	00	0		Added Vol: PasserByVol:	285 232 0	o o	0 139	92	130		374 0		00
Initial Fut:	952	0 339					,	0	Initial Fut:	285 646					0			
User Adj: PHF Adj:	1.00 1.00 1.00	1.00 1.00	1.000.1	1.00 1.00	1.00	0 1.00	1.00	1.00	User Adj: PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00.1	1.00	1.00 1. 1.00 1.	1.00 1.00	1.00
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ornea montant				1 1 1 1 1 1 1 1	1 1 1 1 1 .		1 1 1 1 1 1		Cottored	T) On Module.	=		1 1 1 1 1 1			=	1 1 1	
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Adjustment:	0.95 1.00 1.00	1.00 0.96	0.96	0.95 1.00	0.85	5 1.00	1.00	1.00	Adjustment:	0.95 0.99		0.95 0.96	0.96	0.53	1.00	0.53 0.	0.37 1.00	0.85
Final Sat.:		1900 2683				>		000	Final Sat.:	3608					30		>	
1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	one of the New York of Modello.					<u></u>			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- Indiana	= - .			-		<u> </u>		
Vol/Sat:	0.00 0.26 0.00	0.00 0.13	0.13	0.11 0.00	0.03	3 0.00	00.0	0.00	Vol/Sat:	0.19	0.19	0.06 0.10	0.10	0.50	0.00.0	0.50 0.	.13 0.00	0 0.18
Crit Moves:	* (* 0				•			Crit Moves:	C C		+ (ć			
Green/Cycle: Volume/Cap:	0.01 0.42 0.00	0.00 0.48	0.28	0.20 0.00	0.20	5 0.00	0.00	00.00	Green/Cycle: Volume/Cap:	0.92 0.76	0.76	0.12 0.20	0.20	0.92	0.00	0.70	0.24 0.00	0.55
Level Of Service Module:						=			Level Of Serv	Service Module:	=			<u> </u>		<u>=</u> <u>+</u>	!	-
Delay/Veh:	18.7 6.4 0.0	0.0 10.1		24.7 0.0			0.0	0.0	Delay/Veh:			N		27.9			7.7 0.0	
User DelAdj:	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	00 1.00	0 1.00	1.00	1.00	User DelAdj:	1.00 1.00	1.00	1.00 1.00	1.00		1.00	1.00 1.	1.00 1.00	0 1.00
Queue:	1. 4.	9 0 0						2.0	Queue:	18	, -			5.73				
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B-PM.CMD	Ę	Tue Nov 5, 19	1996 12:31:2	:20		Page	e 8-1	B-PM.CMD		Tue Nov 5, 19	1996 12:31:20	11:20		Page	9-1
	FISC	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	n 2000 E	IS/EIR Alternat:	ive	 			FIS	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	n 2000 num Rai Hour	EIS/EIR Alternat:	ive	1	, , , ,
	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternation ************************************	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	Computation Future Volume Volume Tension	Computation Report (Future Volume Alternativ ************************************	ternati *****	* * * * * * * * * * * * * * * * * * *	* ** ** ** ** ** ** ** ** ** ** ** ** *	1994 ***********************************	Level Of 1994 HCM Operations ************************************	Level Of Service Computa HCM Operations Method (Future ************************************	Computation Future	Computation Report (Future Volume Alternative) ************************************	ternati *****	*	* *
**************************************	**************************************	**************************************	**************************************	<pre>.************************************</pre>	****** . (X): c/veh):	* * * * * * * * * * * * * * * * * * *	**************************************	**************************************	<pre>************************************</pre>	**************************************	**************************************	**************************************	(X): c/veh):	0.585 20.1	
Approach: Movement:	****** North L - T	********** South Bound L - T -	******* ound - R	********** East Bound L - T -	****** ound	******** West E L - T	**************************************	**************************************	North Bound L - T - R	* -	****** ound - R	**************************************	****** ound - R	**************************************	***** und - R
Control: Rights:	rotected	 Protected Ov1		Protected Ovl	ted 20	 Protected Include	otected Include	Control: Rights: Min. Green:	Protected Include			Protected Include	l .	Protected Ovl	ed 20
Min. Green: Lanes:	10 20 0 2 0 2 0 0	7 7	0	0	. 0	`		Lanes:	0 1 1	0 7 7	1 0		1 0	0 1	0 1
Volume Module:			- 11	0 800	74		0	Volume Module: Base Vol:	0	0 31 18	- 0	0	19	0	
Growth Adj: 1	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.0	Growth Adj: Initial Bse:	1.00 1.00 1.00	0 1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00
	445	4,			282	00	000	Added Vol:	47 142 5	53 498 121	112	173 489	57	40 338	365
PasserByVol: Initial Fut:	0 0 0 0 272 445 0	0 449	139	296 0	356		00	Initial Fut:	142	529	112	173 489		40 338	365
		1.00 1		1.00 1.00	1.00	1.00 1.00	.00 1.00	User Adj: PHF Adj:	1.00 1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00
				296 0		ı	ı	PHF Volume:	142	529	112	173 489	76	40 338	365
Reduct Vol: Reduced Vol:	0 0 0 272 445 0	0 449		296 0	356	00		Reduced Vol:	142	529	112	173 489		40 338	365
	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	.00 1.00	PCE Adj: MLF Adj:	1.00 1.00 1.00 1.00	00 1.00 1.00 05 1.00 1.05	1.00	1.00 1.00	1.00	1.00 1.05	1.00
Final Vol.:		30	-	305 0				Final Vol.:	149	529	118	173 538	83	40 355	365
 n F1	ow Module:	0061 0061	1900	0061 0061	1900	1900 1900	0061 00	Saturation F. Sat/Lane:	Flow Module: 1900 1900 1900	11 1900 1900	1900	1900 1900	1900	1900 1900	1900
ment:	1.00		0.85			1.00 1.00		Adjustment:	0.95 0.96 0.96	6 0.95 0.93	0.93	0.95 0.98	0.98	1.00 2.00	0.85
Lanes: 2 Final Sat.: 3	2.00 2.00 0.00 3610 3800 0	0.3800	1615	3610 0.00	1615		- - -	Final Sat.:	2651	1805	1580	1805 4839			1615
Capacity Analysis Module:	ysis Module: 0.08 0.12 0.00	0.00	0 60.0	0.08 0.00	:	0.00 0.00	00.0 00	Capacity Ana Vol/Sat:	Capacity Analysis Module: Vol/Sat: 0.03 0.06 0.0	.06 0.29 0.07	0.07	0.10 0.11	0.11	0.02 0.09	0.23
<pre>Crit Moves: * Green/Cycle: C Volume/Cap: C</pre>	**** 0.22 0.58 0.00 0.35 0.21 0.00	**** 0.00 0.35 0.00 0.35	0.70	0.34 0.00	0.57	0.00 0.00	00.00	<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.20 0.20 0.20 0.13 0.28 0.28		0.39	0.13 0.20 0.75 0.56	0.20	0.13 0.20	0.59
_ Z			_	-	;			₩	ä	9 6 6 6 6	- CF	35 6 23 7	23.7	25 1 23 1	7.1
Delay/Veh: 21.3 6.6 User DelAdj: 1.00 1.00	21.3 6.6 0.0 1.00 1.00 1.00	0.0 15.4	3.2	-	-	7	-	User DelAdj:	1.00			1.00 1.00		1.00 1.00	1.00
AdjDel/Veh: 2	21.3 6.6 0.0	0.0 15.4	3.2	15.2 0.0 6 0	8.0	0.0	0.0	AdjDel/Veh: Queue:	21.4 22.0 22.0 1 4 1	.0 20.0 12.8 1 13 3	17.8	35.6 23.7 5 14	7.7	1 9	.5
****	第2:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1:1	**********	******	******	*****	***	******	***	***	******	* * * * *	***	***	****	# * * * * * *

B-PM.CMD	J.	Tue Nov 5, 1996 12:31:20	12:31:20		Page 10-1	10-1	B-PM.CMD	H	Tue Nov 5, 199	1996 12:31:20	1:20		Page .	11-1
	FISCC Minimum M	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	2000 EIS/EIR Rail Alternat our	ive	, , , ,			FISC	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	1 2000 IM Rail Hour	EIS/EIR 1 Alternati	e A		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Level Of Service 1994 HCM Operations Method	Level Of Service Computation Report perations Method (Future Volume Alt	<pre>Computation Report (Future Volume Alternative) ************************************</pre>	t ternati *****	ve) ******	* * * *	***************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Level Of Service Computation Report perations Method (Future Volume Alt	mputat uture	Computation Report (Future Volume Alternative)	ernativ *****	e) ****	*
Intersection #7 Middle Harbor Rd. / Gate 2	Middle Harbor	.Rd. / Gate 2	****	****	*****	* * * * * *	Intersection	Intersection #8 Adeline St./ 3rd St.	3rd St.	* * * * *	*****	****	******	* * * * * *
Cycle (sec): Loss Time (sec):	100 0 (Y+R =	4 sec	Critical Vol./Cap. (X): Average Delay (sec/veh):	. (x):	0.803).803 20.6	Cycle (sec): Loss Time (sec):	100 12 (Y+R	CZ (280) 24	itical	Critical Vol./Cap. (X):	(X):	0.618	18
Optimal Cycle: 116 Level Of Service:	116	Leve	Level Of Service:	****	**************************************	** ** ** **	Optimal Cycle:	92		Level of	Of Service:		· · · · · · · · · · · · · · · · · · ·	М
Approach: N Movement: L	North Bound	South Bound L - T -	1 East Bound R L - T -	ound - R	West Bound L - T -	ound - R	Approach: Movement:	North Bound L - T - R	South Bound	ind R	East Bound L - T -	und - R	West Bound L - T -	ound - R
<u>-</u>	Protected	Protected	Protected	ted	Protected	ted	Control:	Split Phase	Split Phase		Split Phase	 ase	Split Phase	nase
Min. Green: 10		0 0	0 0 20	20 20	10 20	0	Min. Green:	10 20 20	10 20	50 E	10 20	20 20	inciuae 10 20	10e 20
Lanes: 1	0 0 0	0 0 0 0	0 0 0	1 0	1 0 2	0	Lanes:	0 1 0 1 0	0 1 0 1			1 0	-	г
Volume Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-	1	-	Volume Module	; ; ; ; ; ; ; ; ; ;	1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		; ; ; ; ; ;	
Base Vol: 95	0 6						Base Vol:	0 0	43	15	•	13	•	
	5 0 229	0 0	0 0 0 215 0 0 215	131	1.00 1.00 94 88	-1	Growth Adj: Initial Bse:	36 0 122	43 00	15	30 1.00	1.00	1.00 1.00	1.00
	0		0		. 4		Added Vol:	891	0 57	0		0		. 0
	0 0		0 0				PasserByVol:	0 :00	٥ ;	0 !		0		0
Intial Fut: 177	7 0 639	00 1	0 0 420	1 00	389 302	0 0	Initial Fut: Heer Adi:	36 891 122	1 00 1 00	15	30 14	13	89 39	78
	1.00	1.00 1.00	1.00				PHF Adj:	1.00 1.00 1.00	1.00	1.00		1.00	1.00 1.00	
	0 63		42	23	30		PHF Volume:	891	43 57	15		13		
Reduct Vol: 0 Reduced Vol: 177	0 0 0	00	0 0 0	0 0 0	0 0	0 0	Reduct Vol:	0 0 0	0 0	0 1	0 0	٥ ز	0 0	0 0
	1.00 1	1.00	-	-		1.0	PCE Adj:	1.00 1	1.00.1		ä	1.00	. 0	H
•	1.00.1	1.00	1.00 1			1.0	MLF Adj:		1.05		1.00 1.00	1.00	1.00 1.00	
Final Vol.: 177	7 0 639	0	0 0 441	251	389 317	°-	Final Vol.:	. 38 936 128	45 599	16	30 14	13	89 39	78
Saturation Flow Module	Module:	1	· · · · · · · · · · · · · · · · · · ·	-	· · · · · · · · · · ·	- - - - - - - - - - - - - - - - -	Saturation Flow Module	low Module:			; ; ; ;		 	!!!!!!!!!!!
	1900	1900	1900				Sat/Lane:	1900		1900	1900 1900	1900	1900 1900	1900
Adjustment: 0.95	5 1.00 0.85	1.00 1.00 1.	1.00 1.00 0.95	0.95	0.95 1.00	1.00	Adjustment:	0.98 0.98 0.98	1.00 1.00	1.00	0.95 0.93	0.93	0.95 0.90	
Sat.:	0		0				Final Sat.:	3163	259	92		851	1512 663	1325
Canadity Analysis Module.	Module.			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							1 1
Vol/Sat: 0.10	0 0.00 0.40	0.00 0.00	0.00 0.00 0.19	0.19	0.22 0.08	00.00	Vol/Sat: 0.30	0.30 0.30 0.30	0.17	0.17	0.02 0.02	0.02	0.06 0.06	90.0
	;	;	;				Crit Moves:	* * *						
Green/Cycle: 0.49 Volume/Cap: 0.20	0 0.00 0.49	0.00 00.00	0.00 0.00 0.24	0.24	0.27 0.51 0.80 0.16	00.00	Green/Cycle: Volume/Cap:	0.28 0.28 0.28 1.06 1.06 1.06	0.20 0.20 0.87	0.20	0.20 0.20 0.08 0.08	0.20	0.20 0.20 0.20 0.29	0.20
										<u></u>			- !	
	Module: 2 0.0 17.9	0.0 0.0			28.6 8.6	0.0	Level Of Service Module Delay/Veh: 61.2 61.2	••	32.5	32.5	21.0 21.0	21.0	22.0 22.0	22.0
Ξ.	1.00	1.00 1.00	~1		-	Н	User DelAdj:	1.00 1.00	1.00			1.00		
Adjbel/ven: 9.2 Oueue: 3	3 0.0 17.9 3 0 16	0.0	0.0 0.0 27.0	0.72	11 5	0.0	AdjDel/ven: Onene:	61.2 61.2 61.2	32.5 32.5	32.5	21.0 21.0	21.0	22.0 22.0	22.0
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B-PM.CMD	-	Tue Nov 5, 1996 12:31:20	12:31:20		Pa	Page 12-1	B-PM.CMD	F	Tue Nov 5, 1996	6 12:31:20	1:20		Page 1	13-1
1	FIS	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	2000 EIS/EIR Rail Altern Iour	ative				FISC	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	2000 m Rail Hour	EIS/EIR 1 Alternati	Ve	; ; ; ; ; ;	1 1 5 1 1
******** Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternativ ************************************	Of Service Comions Method (Furthermore)	Service Computation Report ************************************	ort Alternat ******	ve)	* * * * * * * * * * * * * * * * * * * *	1994 * **********************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #12 Maritime St. / W.Grand Ave. / I-880 Ramps	Level Of Service Computation Report Operations Method (Future Volume Al. ***********************************	mputat uture *****	Computation Report (Future Volume Alternative) ************************************	ernativ) * *	*
Cycle (sec): Loss Time (sec): Optimal Cycle:	Cycle (sec): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh) Optimal Cycle: 58 Level Of Service:	00 Critical Vol./Cap. (X): 8 (Y+R = 4 sec) Average Delay (sec/veh): 8 Level Of Service:	Critical Vol./Cap. Average Delay (sec/ Level of Service:	ap. (X): sec/veh)		0.321 9.7 B	Cycle (sec): Loss Time (sec): Optimal Cycle:	Cycle (sec): 100 Critical Vol./Cap. Loss Time (sec): 10 (Y+R = 4 sec) Average Delay (sec Optimal Cycle: 70	**************************************	itical itical erage vel of	Critical Vol./Cap. (X): Average Delay (sec/veh): Level Of Service:	(X): (Veh):	********* 0.440 19.0	* * * 0 0 U
Approach: Movement:	North Bound L - T - R	South Bound L T -	ld East R L -	East Bound - T - R		West Bound - T - R	Approach: Movement:	. 1	South Bound	nd R	East Bound L - T - R	und - R	West Bound L - T - R	ound • R
Control: Rights: Min. Green:	Protected Include 0 20	Protected Include	74 0 0	Protected Include	Pr 10	Protected Include	Control: Rights: Min. Green:	Protected Include 10 20 20	Protected Include	d 1	Protected Include	ed	Protected Include	ed lde 20
Lanes:	1 0 0 0 1	0 0 0 0	0 0 0	1 1 0	0 1	1 1 0	Lanes:	2 0 0 1 0	0 7 7		0	1 1	_	-
Volume Module: Base Vol:	0	0 0	- 0	0	. 0	0	Volume Module Base Vol:	le: 0 23 0	9 23	23	20 454	210	0 624	- 6
Growth Adj: Initial Bse:	1.00 1.00 1.0	1.00 1.00	1.00 1.00 1.0	00 1.00	1.00 1	00.1.00		1.00 1.0	1.00 1.00		Н		ч	1.00
Added Vol:	0 0	00	0 (95	402 0	Added Vol:	0 12		1.0		258	9	0
rasserbyvol: Initial Fut:	0 0 17	0 0 6	0 0	0 0 592 0	9 6	0 0 402 1	PasserByVol Initial Fut	: 0 0 0 : 435 23 129	0 6	73	0 0 20 454	0 468	0 0 95 624	13
User Adj:	1.00 1.00 1.00	1.00 1.00	1.00		1.00			1.00	1.00 1.00			1.00		
PHF Volume:	0	0 0 0	0 0 592	.00 I.00 592 0	95	402 1.00 402 1	PHF AGJ: PHF Volume:	435 23 129	1.00 1.00 9 23	1.00	1.00 1.00 20 454	1.00	1.00 1.00 95 624	1.00
Reduct Vol:	0 0 0	000	000	0 0	0 10	0 0	Reduct Vol:	0 0 0 0	0 0	٥ ر	0 6	0 0		0 (
PCE Adj:	1.00	1.00 1.00	1.00		1.00			1.00	1.00 1.00	1.00			1.00 1.00	1.00
MLF Adj: Final Vol.:	1.00 1.00 1.00 0 0 127	1.00 1.00	1.00 1.00 1.05 0 0 622	05 1.05 622 0	1.00	1.05 1.05 422 1	MLF Adj: Final Vol.:	1.03 1.00 1.00 448 23 129	1.00 1.00 9 23	1.00	1.00 1.10 20 499		1.00 1.05 95 655	1.05
Saturation Flow Module	- [1 10 11 11 11 11 11 11 11 11 11 11 11 11			=				
Sat/Lane:		1900 1900	1900		1900				1900 1900		1900 1900	1900	1900 1900	1900
Adjustment: Lanes:	1.00 1.00 0.85	1.00 1.00	1.00 1.00 1.00 0.00 0.00 2.00	00 1.00	0.95	1.00 1.00 1.99 0.01	Adjustment: Lanes:	0.95 0.87 0.87 2.00 0.15 0.85	1.00 0.50	0.93	0.95 0.92 1.00 1.48	0.92	1.00 1.96	1.00
Final Sat.:	1900 0 1615	5 0 0	0 0 3800	0 00	1805	3791 9	Final Sat.:	3610 250 1403	1805 884	=		_		80
Capacity Ana Vol/Sat: Crit Moves:	Capacity Analysis Module: Vol/Sat: 0.00 0.00 0.08 Crit Moves: ****	00.0 00.0	0.00 0.00 0.16	16 0.00	0.05 0	.11 0.11	Capacity Analysis Vol/Sat: 0.15 Crit Moves: ****	alysis Module: 0.12 0.09 0.09	0.000.03	0.03	0.01 0.19	0.19	0.05 0.18	0.18
Green/Cycle: Volume/Cap:	0.00 0.00 0.25	0.00 00.00	0.00 0.00 0.51	51 0.00 32 0.00	0.16	0.67 0.67 0.16 0.16	Green/Cycle: Volume/Cap:	0.23 0.29 0.29	0.14 0.20 0.03 0.13 0	0.20	0.16 0.37 0.07 0.53	0.37	0.10 0.31 0.53 0.57	0.31
Level Of Service Module:	vice Module:		-	!			Level Of Ser	Module:			1	_	1	<u> </u>
User DelAdj: 1.00 1.00		1.00 1.00	1.00.1	.00 1.00	1.00	3.8 3.8 1.00 1.00	Detay/ven: User DelAdj:	1.00 1.00 1.00	1.00 1.00	1.00	23.3 16.4 1.00 1.00	1.00	29.9 19.1 1.00 1.00	19.1
AdjDel/Veh: Queue:	0.0 0.0 20.1	0.0 0.0	0.0 0.0	9.3 0.0	24.0	3.8 3.8	AdjDel/Veh: Queue:	22.1 18.1 18.1 11 1 3	23.7 21.2 2 0 1		23.3 16.4	16.4	29.9 19.1 3 15	19.1
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15-1		**	*****	105	16.2 C	Sound - R	hase		1 0	!		34	1	0 7	۲.	-i	34	m	H		1 34		0061 0			0 1615) ! ! ! !	2 0.02		5 0.06	-			0 1.00	η -	* * * *
Page		(c) ******	********	0.205	16.2 C	West Bound	Split	H	10 20 1 0 1	1 1 1 1 1 1 1 1	32 31	1.00 1.00)	0 0 0 0	Η.	Η.	218 31	m	H.	1.00 1.00	218 31	1 1 1 1 1 1 1	1900 1900			1805 1900	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.12 0.02		0.36 0.05			16.2 14.	1.00 1.00	. # 1 7 . 01	*******
; ; ;	a)	rnativ	****	: (X	veh):	nd R	=	oj.	0 0			1.00	90	0 9		1.00	18	18	1.00	1.05	19		1900	0.97		455		0.04	ć	0.20	=======================================	:	21.6	00.1	0.17	****
1	SIR srnativ	Computation Report (Future Volume Alternative) ************************************	*****	/Cap.	Average Delay (sec/veh) Level Of Service:	East Bound	Split Phase	Include	20		97	1.00	. 0	0 [ij	Ä	97	σ	-i	1.05	102		1900			2442				0.20			21.6	1.00		****
12:31:20	EIS/E	Computation Report (Future Volume Alt	****	Critical Vol./Cap.	ye Delay (se Of Service:	i ii	 		0 0	=		1.00		0 -	i.	H.	31	m	.		33		1 900			790	<u>:</u>	0.04		0.20	=			1.00		*****
1996 12	on 2000 num Ra c Hour	Computa (Future	* * * *	Critica	Average Level	ound - R			1 0	1		1.00	30	0 6	H		30	(*)	H		32	1 1 1	1900			645	1 1 1 1 1	0.05		0.35	- ;				* -	****
Tue Nov 5, 19	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	Level Of Service Computation Rep HCM Operations Method (Future Volume ************************************	** (4 sec)	South Bound	Prot	H	0 20	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0	1.00 1.00		0 ;	1.00 1.00		0 144	14	-		0 151	1 1 1 1 1 1 1 1 1 1	1900 1900			0 3041	1	0.00 0.05	•	0.00 0.14			0.0 14.4	1.00 1.00	*· *T 0.0	*******
Tue	FISCO/ mum Ma	Level Of perations *******	****		(Y+R =	Ind	ı		, 20		281	1.00	105	0 0	1.00	1.00	386	386	1.00	1.10	425	t 1 1	1 900	06.0	2.00	3417		0.12		0.35		-	15.6	1.00	o . o	*****
	Mini	1994 HCM Ope	*******	-	c): 11 (Y+R : 71	North Bound	Prot	Include	0 20			1.00 1.00		0 0	1.00 1.00		0 194	5			0 213	-	1900 1900	1.00 0.90	0.00 1.00	0 1713	vsis Module:			0.00 0.35		ice Module	0.0 15.6		9.01 0.0	******
B-PM.CMD		level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	***	Cycle (sec):	Loss Time (sec): Optimal Cycle:	Approach:	Control:	Rights:	Min. Green: Lanes:	Volume Module	Base Vol:	Growth Adj:	Added Vol:	PasserByVol:	untial fut: User Adi:	PHF Adj:	PHF Volume:	Reduct vol:	PCE Adi:	MLF Adj:	Final Vol.:		Saturation Fi	Adinstment:	Lanes:	Final Sat.:	Capacity Apalysis	Vol/Sat:	Crit Moves:	Green/Cycle:	Votame/ cap.	Level Of Service Module		••	Adjuel/ven:	**************************************
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e 14-1			*****	.577	21.0 C	Bound	Phase	clude	20 20 0 1 1			00 1.00			00 0.50		30	2					000				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	.15 0.15		54 0 54		-			19.	n *******
Page 14-1		***************************************	**********	0.577	21.0 C	Bound	Split Phase	Include	-		202	1.00		0 (1.00	1.00	202		1,00	1.05	212		0	1900	0.79	1370	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.20 0.15 0.15	* * *		./0 0.54	-	3.3 19.8	1.00	19.61	**************************************
14	v	rnative) ************************************	*****	J	. :	West Bound			20 10 20 0 1 0 0 1		0 202	1.00 1.00	363 0	0 0	1.00	1.00 1.00	363 202	י כ	1.00 1.00	1.00 1.05	363 212		000	0061	1.00 0.79	1805 1370		.20 0.15	* * *	.29 0.29		=	23.3 19.8	1.00 1.00	19.61 8.1	************ C OT
14	IR rnative	(eporternative)	*****	J	. :	West Bound			10 20 10 20 1 0 1 0 1 0 0 1		0 202	1.00 1.00 1.00 1.00	363 0	0 0 0 0	157 105 363 202	1.00 1.00 1.00 1.00	157 105 363 202	0 0 0 0 0	1.00 1.00 1.00 1.00	1.10 1.10 1.00	173 116 363 212			1900 1900 1900 0 0 0 0 0 0 0 0 0 0 0 0 0	1.18 0.79 1.00 0.79	2104 1411 1805 1370	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.08 0.20 0.15	***	0.20 0.20 0.29 0.29	0.41 0.41 0./0 0.54 	-	22.7 23.3 19.8	1.00 1.00 1.00	22.7 23.3 19.8	3 70 5
Page 14	EIS/EIR 1 Alternative	tition Report Volume Alternative) ***********************************	*****	J	. :	West Bound	olit Phase Split Phase		10 10 20 10 20 1 1 0 1 0 1 0 0 1		138 157 0 0 202	1.00 1.00 1.00 1.00 1.00	138 15/ 0 0 202 0 0 105 363 0	0 0 0 0	138 157 105 363 202	1.00 1.00 1.00 1.00 1.00	138 157 105 363 202	0 0 0 0 0 0	1.00 1.00 1.00 1.00 1.00	1.10 1.10 1.00 1.05	152 173 116 363 212			1900 1900 1900 1900 1900 0 0 0 0 0 0 0 0	1.03 1.18 0.79 1.00 0.79	1848 2104 1411 1805 1370	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.08 0.08 0.08 0.20 0.15	***	0.20 0.20 0.20 0.29 0.29	0.41 0.41 0.41 0.70 0.54	-	22.7 22.7 22.7 23.3 19.8	1.00 1.00 1.00 1.00 1.00	22.7 22.7 22.7 23.3 19.8	4 4 3 10 5
Page 14	on 2000 EIS/EIR num Rail Alternative k Hour	Computation Report (Future Volume Alternative) ***********************************	*****	J	. :	West Bound	 d Split Phase Split Phase	Include	20 10 10 20 10 20 1 0 1 1 0 1 0 1 0 0 1		69 138 157 0 0 202	1.00 1.00 1.00 1.00 1.00 1.00	69 138 15/ 0 0 202 0 0 0 105 363 0	0 0 0 0 0 0	69 138 157 105 363 202	1.00 1.00 1.00 1.00 1.00 1.00	69 138 157 105 363 202	0 0 0 0 0 0	1 00 1 00 1 00 1 00 1 00 1 00	1.05 1.10 1.10 1.10 1.00 1.05	72 152 173 116 363 212			1900 1900 1900 1900 1900 1900 1900 1900	0.80 1.03 1.18 0.79 1.00 0.79	1437 1848 2104 1411 1805 1370	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.05 0.08 0.08 0.08 0.20 0.15	***	0.20 0.20 0.20 0.20 0.29 0.29	0.25 0.41 0.41 0.41 0.70 0.54		21.8 22.7 22.7 22.7 23.3 19.8	1.00 1.00 1.00 1.00 1.00 1.00	21.8 22.7 22.7 22.7 23.3 19.8	2 4 4 3 10 D
Page 14	Port Vision 2000 BIS/EIR rine/Minimum Rail Alternative PM Peak Hour	Service Computation Report S Mcthod (Future Volume Alternative) ***********************************	*****	J	. :	West Bound	tected Split Phase Split Phase	Include	20 10 10 20 10 20 0 1 1 0 1 0 1 0 0 1		138 157 0 0 202	1.00 1.00 1.00 1.00 1.00 1.00	138 15/ 0 0 202 0 0 105 363 0	0 0 0 0 0 0	102 69 138 157 105 363 202	1.00 1.00 1.00 1.00 1.00 1.00	102 69 138 157 105 363 202	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 1.00 1.00 1.00 1.00	1.05 1.05 1.10 1.10 1.10 1.05	107 72 152 173 116 363 212			1900 1900 1900 1900 1900 1900	0.80 1.03 1.18 0.79 1.00 0.79	2135 1437 1848 2104 1411 1805 1370		0.08 0.08 0.08 0.20 0.15	***	0.20 0.20 0.20 0.20 0.20 0.29 0.29	0.41 0.41 0.41 0.70 0.54		21.8 22.7 22.7 22.7 23.3 19.8	1.00 1.00 1.00 1.00 1.00 1.00	22.7 22.7 22.7 23.3 19.8	4 4 3 10 5
14	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Alternative PM Peak Hour	vel Of Service Computation Report rations Method (Future Volume Alternative)	*****	J	. :	**************************************		Include	20 10 20 20 10 10 20 10 20 0 1 0 1 1 0 1 1 0 1 0 1 0 0 1		0 69 138 157 0 0 202	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	102 0 0 105 363 0		102 69 138 157 105 363 202	1.00 1.00 1.00 1.00 1.00 1.00 1.00	241 102 69 138 157 105 363 202	0 0 0 0 0 0 0 0	102 69 138 157 103 363 202	1.00 1.05 1.05 1.10 1.10 1.10 1.00 1.05	241 107 72 152 173 116 363 212			1900 1900 1900 1900 1900 1900 1900 1900	1.20 0.80 1.03 1.18 0.79 1.00 0.79	1805 2135 1437 1848 2104 1411 1805 1370		0.33 0.13 0.05 0.05 0.08 0.08 0.08 0.20 0.15	化妆妆物 如果如果	0.19 0.20 0.20 0.20 0.20 0.20 0.29 0.29	0.25		13.8 28.5 21.8 21.8 22.7 22.7 22.7 23.3 19.8	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	28.5 21.8 21.8 22.7 22.7 22.7 23.3 19.8	7 3 2 4 4 3 10 5
Page 14	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	************	J	: 12 (Y+R = '4 sec) Average Delay (sec/veh): 82 Level Of Service:	**************************************		Include	10 20 20 10 10 20 10 20 1 0 1 1 0 1 1 0 1 0 1 0 0 1		0 0 0 241 0 69 138 157 0 0 202	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	241 0 69 138 15/ 0 0 202 0 102 0 0 0 105 363 0		241 102 69 138 157 105 363 202 1 00 1 00 1 00 1 00 1 00	1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00	172 533 241 102 69 138 157 105 363 202	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	241 102 69 138 15/ 105 363 202 1 00 1 00 1 00 1:00 1:00 1:00 1:00	1.00 1.00 1.05 1.05 1.10 1.10 1.10 1.00 1.0	172 533 241 107 72 152 173 116 363 212			1900 1900 1900 1900 1900 1900 1900 1900	1.00 1.20 0.80 1.03 1.18 0.79 1.00 0.79	1900 1615 1805 2135 1437 1848 2104 1411 1805 1370		0.13 0.05 0.05 0.08 0.08 0.08 0.20 0.15	计独立性 化水水油	0.20 0.49 0.19 0.20 0.20 0.20 0.20 0.20 0.29 0.29	0.70 0.25 0.25 0.41 0.41 0.41 0.70 0.54	Level Of Service Module:	13.8 28.5 21.8 21.8 22.7 22.7 22.7 23.3 19.8	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	28.5 21.8 21.8 22.7 22.7 22.7 23.3 19.8	7 3 2 4 4 3 10 5

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C-AM. CMD	Д		Ē	Tue Nov		5, 1996 13:07:09	07:09				Page 3	3-2	C-AM.CMD	Ð			Tue Nov	Nov 5,	1996	1996 13:07:09	60			Page	3-3	
 	† 	Max	FISC	O/Port arine/	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	n 2000 n Rail Hour	EIS/I	EIR] 6 1 1 1	; ; ; ;	1 1 3 1 1	† 	1 ; 1 1 ; ;	1 1 2 6 4 9	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	ISCO/P	FISCO/Port Vision 2000 BIS/BIR um Marine/Minimum Rail Alterna AM Peak Hour	t Vision 200 /Minimum Rai AM Peak Hour	000 EI ail Al ur	EIS/EIR Alternative	ive	1 6 6 1 8	1 1 1 1 1) 	 -
Volume	Northbound Left Thru Right	Northbound t Thru Right	:	Southbound Left Thru Right	und Right	Ea Left	Eastbound Left Thru Right	nd Right	Westb Left Thy		ght V	Total olume	Volume Type	1	Northbound Left Thru Right	1	Sout	Southbound Left Thru Right	1	Eastbound ft Thru Ri	Eastbound Left Thru Right	1	Westbound t Thru Ri	Westbound Left Thru Right	Total Tolume	al al
#14 Uni	#14 Union St./ 5th		1-88 /	0 Nort	St./ I-880 North Ramps	ro							#160													
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Added Total	0 0 0 175	0 171 5 216	00	154	31	24	43	13	297 297	31	115	263 1099	Total	0	0 0					0 0		0 -15	3 212 5 32			17
1	, 1	£ 000			4000	,							171#													
#15 /th Base) , je	I-880 NB Kamps / 548 21 17	кашрs , 17		1. dge RC		16	0	0	62	, -1	759	# to t Base	0	0	0		-178	0	0	,				'	464
Added				0	436	383	æ	0	0	12	0	1408	Added	0	0	0	0	163	0	0	0 375		0 0	0		538
Total	575 54	8 21	17		530	383	19	0	0		H	2167	Total	0	0	0	0 -1	15	0	0						74
#16 7th	St./	I-880 SB Ramps	Ramps										#165													
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Added	0 0	0 0	00	00	0 0	0 0	386	478	0 4	1022	0 0	1886	Added	0 0	0 0	0 0	00	171 -56	00	0 0	0 478	1 8	0 0	0 0	0 0	649
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#18 W.Grand	rand Ave./) Fron:	I-880 Frontage Rd	Ġ.								#177													
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Added	0 271			299	0	0	102	0	137		0	1037	Added	0	0	0	0	418	0	0 110		0	0	0	0	528
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#134													#178													
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#138													#182													
Base	0 -156	0	0	-173	-26	-24	0	0	0	0	0	-379	Base		-370	0	0	,	75	0	0	0			,	845
Added					0	0	0	0	0	0	0	0	Added	0	408	0	0	0	513	0	0	0	0 0			921
Total	-15			-173	-26	-24	0	0	0	0	0	-379	Total		38	0	0		38	0		0				92
#158													#201													
Base		'			0	0	0	0	0	0	0	-309	Base	0	0	0	0	0	0			0				932
Added	0 212		0	0	0	0	0	0	0	0	0	322	Added	0	0	0	0	0	0	0 1051		0	0	0	0 1051	21
Total					0	0	0	0	0	0	0	13	Total	0	0	0	0	0	0	0 119		0				119
#159													#204													
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; ; 1 1	1 1 1 1 1 1	Max	FIS	SCO/Pc Marin	FISCO/Port Vision 2000 EIS/EIR um Marine/Minimum Rail Alterna AM Peak Hour	t Vision 200 /Minimum Rai AM Peak Hour	000 El ail Al ur	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	ive				!				FISCO/Port Vision Maximum Marine/Minimum AM Peak E	SCO/P	FISCO/Port Vision num Marine/Minimum AM Peak F	t Vision 200 /Minimum Rai AM Peak Hour	0 -	EIS/EIR Alternative	ive				
Volume Type	1	Northbound Left Thru Right	1	South Et Thr	Southbound t Thru Righ	ht Le	Eastbound ft Thru Ri	Southbound Eastbound Left Thru Right Left Thru Right	:	Westbound ft Thru Ri	Westbound Total Left Thru Right Volume	Total t Volume	al me					1	Link Volume Report AM Peak Hour	k Volume Rep	eport						!
#207														Volume Type	a u	NB Link Out To	ink Total 1	SB L In Out	SB Link Out Total		EB In Out	EB Link Out Total	tl th		WB Link Total Out Total Volume	Total Volume	a] le
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#217								!	,	,				Total	746	990 1	1736	790 4	468 12	1258 4	466 512		979 1(109 142	2 251	4224	4.
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Total	0		c	0	0			0-	0	0	0	0	r.	Base	0 ;	0 9											108
‡														Added	441	482	923 10	1007 988		1995 101	1019 1154	54 2173	13 1022	22 864 76 864	4 1886	7085	
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#220 Base	c		-		-45	-34	c	c	0	0 -2	02		- 66	IOCAI	110		7 % 7	>	>				1				1
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														Added	828 1113		1942 13	1113 8	828 19 892 20	1942 2058	0 7	, 0 %	0 4	0 5	0 23	0 3883	833
# 22.5 Paren	c			c	c	c	c	c	c	0 -39	9	20	-416	1)		,	,		1		1
Added	0	. 0	. 0	. 0	. 0	. 0	0	0	0	0 43	7		457	#9 7th	#9 7th/New Middle		Harbor										
Total			0	0	0	0	0	0	0		41	0	41	Base	0		0	0	0							0	0
														Added	502		028	0	0	0	517 62	628 1145					46
#226														Total	203	526 1	1028	0	0					1154 101	9 2173	3 4346	9
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Added			5 (4, (5 6	5 (. v	.	> c	.			#12 MA	#12 MAIILIME	7.75	7.61 A 10 A		100-4	-000 RAMPS	6	7001 705		200	017 018	3636	90
TOTAL			5	-	>	>		-I	>	>	>	o	Į,	DASK DAGED	706		200	4 0				•					2 6
#244														Total			1497	91		-		. 4					23
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Added	0	0	0	0	0			422	0	0 39	96	0	1368	#13 Adeline		St./ 5t	5th St./	I-880 SB		Ramp							
Total			0	0		-38		375	0		51		929	Base	0												72
														Added	828			233 1	163 3	396		92 2			573 1283		3883
														Total	828	1222	2051				478 42		904 12	1243 69	696 193		6255

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The column The	C-AM.CMD	₽			חַדָּ ק	ine Nov	5, 199	1996 13:0/:09	01:02				100 P	7-4	C-AM: CMD	ē			1	ומם זאסא	C T 'C	60:/0:5T 066T					ט פר	, i
1 10 10 10 10 10 10 10	1	! ! !	; ; ;	Maxir	FISCO	/Port rine/M	Vision Tinimum	1 2000 Rail Hour	EIS/E Alter	SIR native) m	, , , ,	!	: ! !	1 1 1 1 1	# 1 1 1 1	! ! ! !	Махіп	FISCO	/Port	Visior inimum Peak	2000 Rail Hour		IR native) 	 	1 1 1 1 1	1 1 1 1 1
	Volume Type	· H		nk Potal	!	SB Lin	ik otal	1		ık otal	1	II	[8]	Total Volume	Volume Type	In	1:3	ık otal	1	; ''द	k otal	1		k otal	1	WB Link Out To	tal	Total
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1	#15 7t: Base Added Total		Η.		amps / 111 436 547		tage Rd 660 819 1479	16 386 402	156 1022 1178	172 1408 1580	63 12 75	54 3	117 14 131	1518 2815 4333	#161 Base Added Total		-464 538 74	-464 538 74	-178 163 -15		-178 163 -15	-286 375 89	000	-286 375 89	000	000	000	-928 1076 148
Hart Hart	#16 7t Base Added Total			0 SB Ra 65 478 543	0 0 0	000	000	864 864	0 1022 1022	0 1886 1886	65 1022 1087	0 8 8 9	65 1408 1473	130 3772 3902	#165 Base Added Total		-722 649 -73	-722 649 -73	-227 171 -56		-227 171 -56	-495 478 -17	000	-495 478 -17	000	000	000	-1444 1298 -146
Hand Hand	#17 14 Base Added Total	th St. 89 383 472	/ I-88 140 436 576	80 Fros 229 819 1048		Rd. 6 383 389	36 819 855	000	000	000	146 0 146		265 0 265	530 1638 2168	#170 Base Added Total	-717 666 -51	000	-717 666 -51			-153 92 -61	000	000	000		-564 575 11	-564 575 11	-1434 1333 -101
Hand Hand	#18 W. Base Added Total	Grand 9 383 392	Ave./ 60 436 496			age Rc 514 271 785	1. 1246 570 1816	311 102 413	167 117 284	478 218 696		912 214 1126	1513 467 1980	3306 2074 5380	#177 Base Added Total		-351 418 67	-351 418 67	-351 418 67		-351 418 67	-129 110 -19	000	-129 110 -19		-129 110 -19	-129 110 -19	-960 1056 96
156 173 132 193 180	#134 Base Added Total	389 389	0 415 415	805 805	0,00	000	000	0 247 247	0 297 297	544 544	0 712 712	m m	0 1349 1349	0 2697 2697	#178 Base Added Total	-266 335 69	000	-266 335 69	000	-370 408 38	-370 408 38	-129 110 -19	000	-129 110 -19	000	-25 36 11	-25 36 11	-790 889 99
1 1 1 1 1 1 1 1 1 1	#138 Base Added Total	-156 0 -156		-329 -329		-180 0 -180	-379 0	-24 0 -24	126	-50	000	000	000	-758 0 -758	#182 Base Added Total	-370 408 38	000	-370 408 38		370 408 38	-845 921 76		-475 513 38	-475 513 38	000	000	000	-1690 1843 153
-180 0 -180 0 0 0 0 -358 -358 -178 0 -176 Base 0 -580 -580 -932 0 -932 0 0 0 0 0 212 0 212 0 0 0 0 0 375 375 163 0 163 750 Added 0 658 658 1051 0 1051 0 0 0 0 0 32 0 32 0 0 0 17 17 -15 0 -15 34 Total 0 78 78 119 0 119 0 0 0	#158 Base Added Total	-309 322 13	000	-309 322 13		-180 212 32	-180 212 32	000	000	000		214	-129 110 -19	-618 644 26	#201 Base Added Total	000	000	000	000	000	000	-932 1051 119	000	-932 1051 119		-932 1051 119	-932 1051 119	-1864 2103 239
	#159 Base Added Total	-180 212 32	000	-180 212 32	000	000	000		-358 375 17	-358 375 17	-178 163 -15	000	-178 163 -15	-716 750 34	#204 Base Added Total		-580 658 78	மும	-932 1051 119		-932 1051 119	000	000	000		-352 393 41	-352 393 41	-1864 2103 239

C-AM.CMD	0			Tue	Nov 5	Tue Nov 5, 1996 13:07:09	13:0.	60:7			ŭ	Page 4-	4-	C-AM.CMD Tue Nov 5, 1996 13:07:09 Page	ige 5-1
! ! ! ! !	; ; ; ; ;	1 	Maximu	ISCO/	Port V ine/Mi	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	2000 Rail	EIS/EI Altern	Rative					FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	
Volume	N GI	NB Link Out To	ink Total	In O	SB Link Out Total	! !	In Q	EB Link Out To	ink Total	In Ou	WB Link Out Tol	tal v	Total Volume	Impact Analysis Report Level Of Service	
														se Future	Change
#207 Base	-714		-714		-1110 -	-1110	0	0	0	-396	0	-396	-222	Del/ V/ Del/ V/ LOS Veh C LOS Veh C	uı
	847	000	847	0 0		1284	00	00	00	437			2568	6.3 0.089 B 8.5 0.278 +	2.178 D/V
Total	133	5	133			7 / T	>	5	>	-i -r	>	- -	540	# 4 Maritime St./ 14th St. C 15.0 0.161 C 20.8 0.819 + 5.7	5.776 D/V
#214 Base	,	1	-546	0	0	0	,	- 564 -	564	-1110		,	-2220	# 5 Maritime St./ 7th St. Extensio B 12.7 0.071 B 12.1 0.588 -0.5	-0.581 D/V
Added	00	710 164	710 164	00	0 0	00	00	575 11	575 1 11	1284 174	0 0	1284 174	2568 348	# 6 7th St./ 7th St. Extension C 16.4 0.000 C 24.9 0.672 + 8.5	3.542 D/V
#217	•	į	,	ļ		Ļ	i.	ď	i C			Ĺ	, ,	# 7 Middle Harbor/New Mddl Hrbr Rd B 6.6 0.167 C 16.8 0.736 +10.155).155 D/V
Base	00	35	35	35	00	35	36	00	36			36	-140 142	# 8 Adeline St./ 3rd St. B 8.7 0.064 F 111.2 0.705 +102.	+102.460 D/V
Total	0	-10	-10	-10		-10	11	0	11	0	11	11	N	# 9 7th/New Middle Harbor 0.0 0.000 C 20.7 0.810 +20.677	V/G 779.
#218 Base	-21	0	-21			-42	-25	0 (-25	0 0	4.	4.	- 92	# 12 Maritime St./ W.Grand Ave./ I- B 12.0 0.242 C 17.1 0.547 + 5.1	5.120 D/V
Added	15	00	15	00	47 5	5.	36		36 11	ာ်ဝ	4 0-	4 0	107	# 13 Adeline St./ 5th St./ I-880 SB C 18.3 0.236 D 28.2 0.789 + 9.5	N/0 906.6
#219	,	¢	;			Ç		ć	Ġ	ć	c	ć	,	# 14 Union St./ Sth St./ I-880 Nort C 16.4 0.104 C 17.0 0.137 + 0.6).629 D/V
Base	47	00	47	00	. 43 74	-43 74		700	700	700	000	200	134	# 15 7th St./ I-880 NB Ramps / Fron B 13.0 0.366 C 22.8 0.605 + 9.8	9.827 D/V
Total	4	0	₫	0	4	4	5	5	5	5	-	0	x 0	# 16 7th St./ I-880 SB Ramps A 0.1 0.020 A 1.4 0.331 + 1.5	1.291 D/V
#220 Base	0	-45	-45	62-	0 (-79		-54	-54	-20	0 (-20	-198	# 17 14th St./ I-880 Frontage Rd. A 2.8 0.000 D 3.9 0.000 + 0.0	0.000 V/C
Added	00	35 -10	35	3 82	00	89 23 E	0 0	14	14	0 0	0 0	0 0	202	# 18 W.Grand Ave./ I-880 Frontage R C 19.9 0.237 C 21.2 0.544 + 1.3	1.301 D/V
#225 Base	0	0	0		-20	-20		-396	-396	-416	0	-416	-832		
Added	0	0	0	0	20	20	0			457	0	457	914		
Total	0	0	0	0	0	0	0	41	41	4.1	0	41	82		
#226 Base	0	0	0	4-	0	4.	-352		-352		-356 -	356	-712		
Added	0	0	0	4 .	0	4 (393	0 (393	0 (397	794		
Total	0	0	0	0	0	0	41	>	41	o	41	41	78		
#244 Base Added	00	0 0	00			-600 -			-692		422		-1384 2737		
Total	0	0	0	-38	-11	-49	364	313	929	351	375	725	1353		

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FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour		FISC	FISCO/Port Vision 2000 EIS/EIR	
		Maximum Me	Rail	
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Ve)	Level C 1994 HCM Operatio	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #4 Maritime St. / 14th St.	ve)
Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:		Cycle (sec): 100 Loss Time (sec): 8 (Y+R Optimal Cycle: 70	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 70 Level Of Service:	0.819 20.8
Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R I	<u>.</u>	Approach: North Bound Movement: L - T - R	South Bound East Bound L - T - R L - T - R	
Protected Protected Trained	Protected	Control: Protected	- Protected Permitted Include Ovi	
20 10	0 0 0 0	een: 10 1 0	10 20 20 10 1 0 1 1 0 0 0	10 20 20 1 0 0 1 0
	;	Volume Module:	· - - - - - - - - -	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
287 0 0 0 5 1.00 1.00 1.00 1.00	1.00 1.00	Base Vol: 0 91 39 Growth Adi: 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	22 0 87 1.00 1.00 1.00
0 0 0 0		: 0 91 408 209	103 261 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0
0 0 0	0 0	1: 0 0		0
713 177 106 0 5 1.00 1.00 1.00 1.00	1.00 1.00 1.00	Initial Fut: 408 300 39 User Adj: 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	22 0 87 1.00 1.00 1.00
1.00	1.00 1.00 1.00	1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
0	0	0	0 0 0 0	. 0
0 713 177 106 0 5	0 0 0 0	Reduced Vol: 408 300 39 PCE Adi: 1.00 1.00	1.00 1.00 1.00 1.00 1.00	22 0 87
1.05 1.00 1.00	.00 1.00	1.00 1.05	1.00 1.05 1.05 1.00 1.00	1.00
- :	0 0 0	Final Vol.: 408 315 41	103 612 110 81	22 0 87
0061 0061 0061	1900	Flow Module: 1900 1900	1900 1900 1900 1900 1900 1900	1900
0.97 0.97 0.95 1.00 0.85 1.60 0.40 1.00 0.00 1.00	0.00 0.00 0.00	Adjustment: 0.95 0.98 0.98 U.98 Danes: 1.00 1.77 0.23	1.00 1.70 0.30 0.17 0.00 0.83	1.00 0.00 1.00
730 1805 0	0	Final Sat.: 1805 3295 429	1805 3157 567 243 0 1153	1083 0 1615
0.00 0.25 0.25 0.06 0.00 0.00	0.00 0.00 00.00	Capacity Analysis Module: Vol/Sat: Vol/Sat: Cat Move: ****	0.06 0.19 0.19 0.33 0.00 0.33	0.02 0.00 0.05
0.62 0.20 0.41 0.29	0.00 00.00 00.0		0.17 0.24 0.24 0.41 0.00 0.68 0.33 0.82 0.82 0.82 0.00 0.49	0.41 0.00 0.41
6.3 22.1 0.0	.0 0.0	rvice Module: 29.1 15.5 1.00 1.00	23.8 27.7 27.7 23.4 0.0 5.2 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	1.00
6.3 6.3 22.1 0.0 20.7 11 3 3 0 0	0.0	Adjuel/ven: 29:1 15:5 15:5 Queue: 12 6 1	3 17 4 3 0 5	0.00 12.0

C-AM.CMD	r	Tue Nov 5, 1996 13:07:09	196 13:	60:10			Page	8-1	C-AM.CMD		Tue	Tue Nov 5, 1	1996 13:07	90:20		Page	9-1
, 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FISC Maximum P	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	on 2000 im Rail : Hour	EIS/EIF Alterna	R ative					Maxi	FISCO/	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	on 2000 um Rail k Hour	EIS/EIR Alternative	ive		
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Of Service C lons Method (************************************	Computa (Future :*****	Computation Report (Future Volume Alternative	port Alterr	native)	, # * * *	; ** ** ** ** ** ** ** ** ** ** ** ** **	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	1994 HCM Ope ************************************	Level Of Soperations I	Level Of Service Com Operations Method (Fu ************************************	Computa (Future	Computation Report (Future Volume Alternative) ************************************	rt lternati ******	ve) ******	* * *
**************************************	**************************************	**************************************	****** Critica Average Level O	**************************************	******* Cap. (X) (sec/veh	(de (de (de)	******** 0.588 12.1 B	38 *** 1.1 1.1	Cycle (sec): 100 Critical Vol./Cap. (X Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/ve Optimal Cycle: 68	ec): 68	0 0 (Y+R =	4 sec)	Critical Average I Level Of	Critical Vol./Cap. (X): sec) Average Delay (sec/veh) Level Of Service:	* ~ E ·	0.672 24.9 C	N D U
**************************************	**************************************	South Bound	****** ound - R	***** L East	******** East Bound	*	******** West Bound - T -	.***** ound - R	**************************************	**************************************	ound - R	South Bound	ound - R	South Bound East Bound L - T - R L - T - T - T - T - T - T - T - T - T -	Bound	West Bound L - T -	und - R
Control: Rights: Min. Green:	Protected Include 10 20 (-	red 20	Prot	Protected Ovl	20	Protected Include		Control: Rights: Min. Green:	급성급	1	1 4 4	1	Protected Include	t .	1 # 0	ì
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j: se:	1.00 1.0	1.00 1	-	1.00 1.00		i.	٥٠٢	1.00	Growth Adj: Initial Bse:	-	00.1	00 1.00	1.00	1.00 1.00	0 1.00	1.00 1.00	1.00 54
Added Vol: PasserByVol:	493 0	00		123		446		001	PasserByvol:	0 0 0	,						10 1
Initial Fut: User Adj:	654 493 0 1.00 1.00 1.00	1.00		192		Н	Н	Н	Initiai Fut: User Adj:		1.00						1.00
	1.00 1.00 1.00 654 493 0	1.0	1.0	1.00		1.00 1. 483	1.0	1.00	PHF Adj: PHF Volume:	1,0	1.00	403 176	42	358 412	1.0	58 493	525
Reduct Vol: Reduced Vol:	0 0 654 493	0 0 0	479	192	۰ ۰	483	00		Reduct Vol: Reduced Vol:	233 159	2 4	403 176					525
	1.00 1.0	1.00 1		1.00		4 4	.00 1.00	0.1	PCE Adj: MLF Adj:	1.00 1.00	1.05	1.00 1.00	1.00	1.00 1.00 1.05	0 1.00 5 1.00	1.00 1.00 1.00 1.05	1.00
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Saturation Flast/Lane: Adjustment: Lanes:	Flow Module: 1900 1900 1900 : 0.95 1.00 1.00 2.00 2.00 0.00	1900 1.00 0.00		1900 0.95 2.00			190 1.0	190 1.0	c u				1900	1900 1900 0.95 1.00 1.00 2.00	0 1900 0 0.85 0 1.00	1900 1900 0.95 1.00 1.00 2.00	1900
Final Sat.:	3610 3800	0 3800	1615	3610	0	1615	0 1 1 1 1 1	0	Final Sac.:	79/7 SN8T		10051 5001	1 :		1 :		
Capacity Analysis Module: Vol/Sat: 0.19 0.14 0 Crit Moves: ****	ysis Module: 0.19 0.14 0.00	0.00 0.15	0.30	0.05 0.00		0.30 0.	00.000.	00.0	Capacity Analysis Vol/Sat: 0.13 Crit Moves:		e e	0.22 0.09					0.33
Green/Cycle: Volume/Cap:	0.35 0.71 0.00 0.54 0.19 0.00	00.000.36	0.57	0.21	0.00.0	0.56 0.	00.0 00.	00.00	Green/Cycle: Volume/Cap:	0.16 0.20	0.20	0.28 0.32 0.81 0.29	0.32	0.24 0.20 0.81 0.57	7 0 7	0.24 0.20	0.48
Of Vel	3. 3. 1.0	0.0 15	1.0 1.0 8.	21.4	1.00 1	9.6 0.00 1.00 9.6	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0 + 0	Level Of Service Module Delay/Veh: 39.0 22.1 User DelAdj: 1.00 1.00 AdjDel/Veh: 39.0 22.1	rvice Module 39.0 22.1 : 1.00 1.00 39.0 22.1	e: 22.1 1.00 22.1	28.6 16.5 1.00 1.00 28.6 16.5	25.9	30.5 23.8 1.00 1.00 30.5 23.8	8 27.3 00 1.00 8 27.3	19.1 25.7 1.00 1.00 19.1 25.7	14.9
Queue: *********	15 5 0 **********	************	* * * *	* * *	*	* * * * * *	* *	* * * *	********	* * * * * * * * * * * * * * * * * * * *	* * * * * * *	* *	* *	*	**	****	* * * * * * * * * * * * * * * * * * * *

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	F) Maximun	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	t Vision 200 /Minimum Rai AM Peak Hour	0 EIS/EIR 1 Alternat	ive				Ma	FISCO ximum Ma	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	t Vision 2000 /Minimum Rail AM Peak Hour	EIS/EIR Alternative	Ve	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #7 Middle Harbor/New Mddl Hrbr Rd ************************************	Level Of Servic perations Metho ************************************	e Comput d (Futur ******* 1 Hrbr R	Service Computation Report ************************************	rt ternati *****			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	1994 HCM ********	Level Of Operation *********	Level Of Service 1994 HCM Operations Method ************************************	Computat (Future	Computation Report (Future Volume Alternative)	 t ternativ ******	* * * * * * * * * * * * * * * * * * * *	* *
Cycle (sec): Loss Time (sec): Optimal Cycle:	<pre>Cycle (sec): 100</pre>	0 (Y+R = 4 sec	Critic) Averag Level	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	o. (x): ec/veh):		. 736 16.8	Cycle (sec): 100 Loss Time (sec): 12 (Y+R = 4 Optimal Cycle: 92		******** 100 12 (Y+R = 92	* 0 * 0	Critical Average I	**************************************	. (X): c/veh):	* * * * * * * * * * * * * * * * * * * *	********* 0.705 111.2 F
Approach: Movement:	North Bound	l South	South Bound	East Bound	Sound - R	West Bound	****** ound - R	**************************************	*	******* Bound - R	*********** South Bound L - T -	sound - R	**************************************	******* ound - R	*********** West Bound L - T - R	****** Bound - R
Control: Rights:	 Protected Include	 Protec Incl	Protected Include	 Protected Include	ted	 Protected Include		Control:	Split Phase	it Phase	Split Phase	hase	 Sp1	nase	 Sp1	Phase
Min. Green:		20 0	0	0 0	50	10 20		Min. Green:	10		10	.uae	FF 01		Incl. 10 20	Include 20 20
			> {	- :	1	7 0 1		Lanes:	0 1 0	1 0	0 1 0	1 0	0 1 0	1 0	0 1 0	1 0
Volume Module: Base Vol:	53 0	45 0	0	0	39	208 338	0	Volume Module Base Vol:		. 31	26 0	26	α	- 00		0
Growth Adj: Initial Rea.	1.00 1.00 1.	1.00 1.00 1.00	00 1.00	1.00 1.00	H.	-	1.0	Growth Adj:	1.00 1.00	Н.	1.0	1.00	1.0		,-i	1.
Added Vol:	0 0			0 50	0	478 343	> 0	Initial Bse: Added Vol:	8 0 828	0 31 8 0	26 0	56	9 0	67	50 59	92 6
PasserByvol:	0 (0 (0 0				0	PasserByVol:						0		
User Adj:	1.00 1.00	1.00 1.00 1.0	00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	Initial Fut: User Adi	8 828	31	26 1113	1 26	8 6	5 7 6		
PHF Adj:	1.00	1.00 1	0	1.00		00		PHF Adj:	1.00 1.00				4 1		1.00 1.00	1.00
Reduct Vol:	53 0	464 0 D	00	0 205	68 0	686 681	0 0	PHF Volume:	8 828	31	26 1113				Ŋ	
Reduced Vol:	53 0	464 0	0			68	. 0	Reduced Vol:	8	m	26 1113	7 7 7 8	- w	0 6	50 59	0 4
PCE Adj:		1.00		1.00		00				1.00	-	1.00			÷.	H
Final Vol.:	53 0 4	464 0 0 0	0 1.00	1.00 1.05 0 215	1.05	1.00 1.05	1.00	MLF Adj: Final Vol.:	1.05 1.05	33	1.05 1.05 27 1169	1.05	1.00 1.00 R 6	1.00	1.05 1.05	
						- [<u> </u>			ij		i	;		;	
Sat/Lane: 1900 1900		0061 0061 0061	1900	0001 0001	1 900	0001	0	g		0						
Adjustment:						92		Sat/Lane: Adjustment:	0.99 0.99	0061	1,00 1,00	1900	1900 1900	1900	1900 1900	1900
Lanes:	0.00			0.00		00			0.02 1.91	0.07	0.04 1.92	0.04				
Final Sat.:	1805 0 1615	15 0	0	0 3128	596	1805 3800	o ⁻	Final Sat.:	33 3593	136	84 3632	84	1053 790	1615	1089 1273	
Capacity Ana	Module	=		_			_	Capacity Analysis	ysis Modul	le:	 		; ; ; ; ; ; ;		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
VOI/Sat: Crit Moves:	0.03 0.00 0.29	0.29 0.00 0.00 ****	00.00	0.00 0.00	0.07	0.38 0.19	00.00	Vol/Sat:	0.24 0.24	0.24	0.32 0.32	0.32	0.01 0.01	0.02	0.05 0.05	0.05
Green/Cycle:	0.34 0.00	34 0.00 0.00	00.00	0.00 0.20	0.20		0.00		0.21 0.21	0.21	0.27 0.27	0.27	****	000	****	Ċ
Volume/Cap:	0.09 0.00 0.83	83 0.00 0.00	00.0 00	0.00 0.34	0.34	0.83 0.29	00.00			1.18		1.18				
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Delay/Veh:				0.0		20.7 4.7	0.0	Delay/Veh: 1	123.4 123	123.4	118.0 118	118.0	20.8 20.8	21.1	21.8 21.8	21.8
User DelAdj: 1.00 1.00		1.00 1	_	1.00	1.00	00	1.00	User DelAdj: 1.00	•	1.00	-	1.00				
Aujber/ven:	14.3 0.0 26.8		0.0	0.0 22.3	22.3	20.7 4.7	0.0	AdjDel/Veh: 123.4	23.4 123	123.4	118.0 118	118.0	20.8 20.8	21.1	21.8 21.8	21.8

			11111																	
1 1 1 1 1 1 1 1 4 4	FIS Maximum	SCO/Po Marin	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	2000 El kail Al	IS/EIR ternati	ge .					Ä	FIS	PISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	t Vision 200 //Minimum Rai AM Peak Hour	nn 2000 im Rail : Hour	FISCO/Port Vision 2000 BIS/EIR um Marine/Minimum Rail Alternative AM Peak Hour	tive	 		
level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	1 Of S tions ******	of Service Computation Report lons Method (Future Volume Alt. 11-11-11-11-11-11-11-11-11-11-11-11-11-	outatic	on Repor	ternati ******	! *		ı *	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Level Of Service 1994 HCM Operations Method ************************************	Level Operati	Of Selions M	Service Compus Method (Futu ***********************************	Computa (Future :****** ive./ I	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative) ************************************	ort Alterna ******* ps	ttive) *****	***************************************	* * *
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Cycle (sec):	100	= <u>4</u> +%)	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh):	tical age De	Critical Vol./Cap. Average Delay (sec/	. (x) : c/veh) :	,	20.7	LOSE	Loss Time (sec):	•	10 (Y+R	H	sec)	werage	4 sec) Average Delay (sec/veh)	sec/vel	<u>ن</u> :	17.1	۳. (
optimal Cycle:	67	1	Leve	al of	Level Of Service:	, ,	*	 		Optimal Cycle:	*	70	*	***	Level Of *******	Level Of Service: ************************************	# * * * *	***	******	* * c
* * *	*	***	************	* * * *	Fast Bound	arrer. Ound	:	Bound	•	Approach:	North	North Bound	S	South Bound	punc		punos		£	punc
Approach: Movement:	North Bound L - T - 1	_ K	L - T - 1	: عد	1 - 1	ex I		<u>د</u> ا	-	Movement:	י ב	T . T	7 - I	4	2	L -	£ :	L 	E	α i
	Dx0+0x0	<u>:</u> :	Protected	<u>-</u>	Protected	ted	 	cted	Cont	Control:	Prot	Protected	=	Protected	red	Prot	Protected	•	Protected	ted
Control: Rights:	Include		Include		H		•	Include	Righ	Rights: Win Green:	ŭ.	Include	20 1	Include .0 20		10	include 20		10 20	
Min. Green: Lanes:	10 0 0	70	0000	00	0 0 1	1 0	1 0	0			0	н	0	0	0 7	1 0	1 1	1	0	1 0
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1 1		1				1 1 1 1 1 1		t t t						
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Base vol: Growth Adi. 1	1.00		1.00		1.00 1.00	1.00	1.00 1.0	Н			H	00 1.00		ri.	1.00	1.00 1.	394	1.00 1.00		-
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Added Vol:	0	502		0 (0 517		526 628	, c	Pass	PasserBvVol:	0		0			0	0		0	
PasserByVol:	0 0	0 6	00	0 0	0 517		526 62	, œ		Initial Fut:	294					48			117 300	
Initial Fut: Hoom Add:		1 00 1		1.00 1		1.0	1.00.1	-		User Adj:	1.00 1.			00 1.00		1.00	1.00 1.	1.00	1.00 1.00	00.1
			1.00	1.00.1	1.00 1.00	1.00	1.00 1	-		PHF Adj:	1.00 1.	1.00 I.	1.00 1.00 102 16	16 28	47	4.8				
PHF Volume:	0	502	0	0 (51	0 0	526 628	m c	O Red	Reduct Vol:									0	_
Reduct Vol:	0 0	0 0	o c		0 517	0	55	, 6 0		Reduced Vol:	294			16 28		48				
: 10/	. 00 1 00 1	-				1.0	1.00			PCE Adj:	1.00 1.					1.00		1.00	1.00 1.00	1.00
M.F. Adi	1.00		0 1.00		1.00 1.05		1.00 1		_	MLF Adj:				1.00 1.00	1.00	00.1	204 4		117 315	
1.:	0		0		0 543		526 659	66	O Fin	Final Vol.:	303	33 I	102	77 97	i	0 -	÷		- 1	
	w. Modulo.	-			1 1 1 1 1 1 1 1	1			Sat	Saturation Flow Module:	low Modi		-							0
Saturation Flow Module:		1 900	1 9061 0061	1900	1900 1900	0 1900	0061 0061 0		1900 Sat	Sat/Lane:	1900 1900					1900				
 					1.00 1.00		0.95		•	Adjustment:	0.95 0.			16.0 56.0	16.0	20.0	1.00 0.1	2.00 1.	1.00 1.94	0.06
	00.0		00.0			0.0	1.00			Lanes:	25.00 0.2	0.24 0.	1278 18			1805			1805 3694	
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es:							* (c		Crit Moves:	0 13	0.22 0.	0.22 0.	0.11 0.20	0.20	0.19	0.47 0.	0.47 0.	0.10 0.38	8 0.38
Green/Cycle:	0.00 0.00	0.37	00.00 00.00	00.0	0.00 0.20	1 0.00	0 0.84 0.32		0.00 Vol	Volume/Cap:	0.64					0.14	0.44 0.	0.64 0.	0.64 0.22	2 0.22
vorume/ cap:		_		_	!	1				Level Of Ser	Service Modul	Jule:			!		1	_		,
Level Of Service Module: Delay/Veh: 0.0 0.0	o.0 0.0 2	25.5	0.0 0.0	0.0	0.0 26.3		26.1			Delay/Veh:	28.7			25.8 21.7		21.8	11.6 13	13.5 33	33.0 13.6	13.6
Deray, ven:			1.00		1.00 1.00	-	1.00			User DelAdj:	1.00			1.00 1.00	1.00	L. 00			33 0 13 6	
AdiDel/Veh:					0.0 26.3	3 0.0	26.1 8			AdjDel/Veh:	28.7 21.6		21.6	.12 8 .22		D . T 7			. m	
			•	c	_	ď	15	0.7	ממ	Caene:	٥	•	,	•		1				4

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Figure Properties Propert	C-AM.CMD Tue Nov 5, 1996 13:07:09 Page 14-1	C-AM.CMD Tue Nov 5, 1996 13:07:09 Page 15-1
1984 HOW GRANTED CONTRICTOR MATERIAL 1994 HOW GRANTED CRANTED CRANTED CONTRICTOR 1994 HOW GRANTED CRANTE	FISCO/Port Vision 2000 BIS/BIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	ļ
Control Cont	eport e Alternative) ************************************	Of Service Computation Report ions Method (Future Volume Alternative) ************************************
Froncett Froncett	<pre>100</pre>	100 Critical Vol./Cap. (X): c): 11 (Y+R = 4 sec) Average Delay (sec/veh): : 71 Level Of Service:
Procected Proceed Procede Proceed Proceed Proceed Proceed Proceed Proc	North Bound South Bound East Bound West Bound	North Bound South Bound East Bound
10	Protected Protected Split Phase Ovl	: Portected Protected Split Phase Trainde Trainde
ntition 0 0 0 72 109 165 265 51 0 0 109 344 Base Working 1 0 107 101 101 101 101 101 101 101 101	10 20 20 10 20 20 10 10 20 10 20 10 10 1 0 1	0 20 20 20 10 20 10 20 20 10 20 0 0 0 1 1 1 0 0 1 1 0 0 1 0 1
1.00 1.00		
1.00 1.00	0 0 0 72 109 165 256 51 0 0 169	0 175 45 0 154 31 24 43 13 205 31
10 10 10 10 10 10 10 10	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	32 163 573 0 233 0 0 0 171 710 0 0 0 0 0 0 0 0 0 0 0 0 0	: $0.1/3$ 45 0.154 31 24 43 13 205 31 0.0 0 0 0 0 92 0
100 1.00 1.00 1.00 1.00 1.00 1.00 1.00		
100 100 1.00 1.00 1.00 1.00 1.00 1.00	92 163 573 72 342 165 256 51 171 710 169 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	: 0 175 216 0 154 31 24 43 13 297 31 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
10 10 10 10 10 10 10 10	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
100 100	92 163 573 72 342 165 256 51 171 710 169	0 175 216 0 154 31 24 43 13 297 31
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	92 163 573 72 342 165 256 51 171 710 169	. 0 175 216 0 154 31 24 43 13 297 31
1.00 1.00 1.00 1.00 1.05 1.05 1.05 1.05	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Saturation Flow Module: Saturation Flow Hole 100 100 100 100 100 100 100 100 100 10	1.00 1.00 1.00 1.00 1.05 1.05 1.05 1.00 1.00	1.00 1.10 1.10 1.00 1.05 1.05 1.05 1.05
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Adjustment: 1.00 0.85 0.95 0.95 0.95 0.95 0.96 0.95 0.92 0.92 1.00 0.97 0.97 0.97 0.97 0.96 0.96 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	0061 0061 0061 0061 0061 0061 0061 0061	Flow Module: 1900 1900 1900 1900 1900 1900 1900 1900
1.00 1.00 1.00 1.35 0.65 1.66 0.34 1.00 1.00 0.96 1.04 1.05	0.95 1.00 0.85 0.95 0.95 0.95 0.95 0.88 0.88 0.95	: 1.00 0.92 0.92 1.00 0.97 0.97 0.96 0.96 0.95 1.00
Third Sale 1805 1906 1135	1.00 1.00 1.00 1.00 1.35 0.65 1.66 0.34 1.00 1.00 0.96	0.00 1.34 1.66 0.00 1.66 0.34 0.60 1.07 0.33 1.00 1.00
Capacity Analysis Module: **** **** **** **** **** **** ****	1803 1804 1815 1805 1845 1845 1846 1877 1805 1897	: 0 Z346 Z836 0 306Z 6Z4 1086 I955 608 I805 I900
Tric Module: 2.5 2.0 2.0 2.0 2.0 2.0 2.0 2.0 0.36 0.38 0.38 0.38 0.38 0.38 0.38 0.38 0.38	0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Module:
Green/Cycle: 0.00 0.23 0.23 0.23 0.20 0.20 0.20 0.30 0.46 0.46 0.46 0.46 0.46 0.45 0.51 0.40 0.74 0.45 0.45 0.51 1.04 0.28 0.28 Volume/Cap: 0.00 0.36 0.36 0.00 0.23 0.23 0.12 0.12 0.36 0.04	0 HT.D NO.0 DT.D NO.0 NO.0 DT.D DT.D PD.D NO.0 NO.0 TO.D TO.D	70.0 OT.0 70.0 70.0 70.0 CO.0 CO.0 00.0 00.0 00.0 00.0 00.0 0
	0.10 0.20 0.58 0.10 0.20 0.20 0.20 0.20 0.30 0.38 0.38	0.00 0.23 0.23 0.00 0.23 0.23 0.20 0.20
Level Of Service Module: 29.5 22.7 9.5 28.0 27.0 27.9 22.9 22.9 23.4 56.1 13.9 13.9 Delay/Veh: 0.0 21.0 21.0 0.0 20.3 20.3 21.2 21.2 21.2 11.4 9.6 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 07:0 FO:T TG:0 G#:0 G#:0 G#:0 F:0 #/:0 0#:0 T0:0 G#:0 TG:0	
23.5 22.7 3.5 26.0 27.0 27.5 22.7 23.4 50.1 13.9 13.5 Detay/ven: 0.0 21.0 21.0 21.3 20.3 21.2 21.2 11.4 9.6 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	rvice Module:	ervice Module:
29.5 22.7 9.5 28.0 27.0 27.0 22.9 23.4 56.1 13.9 13.9 AdjDel/Veh: 0.0 21.0 21.0 0.0 20.3 20.3 21.2 21.2 21.2 11.4 9.6 3 4 11 2 10 5 7 1 4 29 3 4 Queue: 0 5 6 0 4 1 1 1 0 5 0	25.5 22.7 5.5 26.0 27.0 27.0 22.5 22.5 25.4 56.1 15.9 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
3 4 11 2 10 5 7 1 4 29 3 4	29.5 22.7 9.5 28.0 27.0 27.0 22.9 22.9 23.4 56.1 13.9	0.0 21.0 21.0 0.0 20.3 20.3 21.2 21.2 21.2 11.4 9.6
	3 4 11 2 10 5 7 1 4 29 3	Queue: 0 5 6 0 4 1 1 1 0 5 0 2

C-AM.CMD	Tue	Tue Nov 5, 1996	1996 13:07:09	! ! ! ! !	Page	16-1	C-AM.CMD		Tue Nov 5,	1996 13:0	13:07:09		Page 17-1	Ħ
	FISCO/ Maximum Mar	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	2000 EIS/E Rail Alter our	ir native				FI	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour		EIS/EIR Alternative	0		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	putation R ture Volum ******** Frontage	eport Alterne **********************************	* 1	* * * * * * * * * * * * * * * * * * * *	1994 ***********************************	Leve 1994 HCM Opera ************************************	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative) ************************************	Computat (Future	Computation Report (Future Volume Alternative) ************************************	rnative)	* * * * * * * * * * * * * * * * * * *	# # #
Cycle (sec): Loss Time (sec): Optimal Cycle:	100	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	/Cap. (X) (sec/velice:		0.605 22.8	Cycle (sec): Loss Time (sec): Optimal Cycle:	c): 5	(Y+R = 4 sec)	Critical Average Level Of	Critical Vol./Cap. (X): 0.331 4 sec) Average Delay (sec/veh): 1.4 Level Of Service: A	(X): (veh):	0.331 1.4 A	* · · · · · · · · · · · · · · · · · · ·
	North Bound	South Bound L - T -	d Eas	East Bound	il.	Sound	Approach: Movement:		South Bound R L - T -	Bound T - R	East Bound		West Bound	nd R
Control: P		Protected Ov1	-	Protected Include	Protected	 ;ted :ude	Control: Rights:	Protected Include	 Prote Ind	 Protected Include	Protected Tnclude		Protected Thelude	
Min. Green: 10 Lanes: 2 (10 20 1 0 0 0	20 10 2 1 0	0 70 70	20 0 20	1 0	Min. Green: Lanes:		0 0 0	0 0 0	0 0 20	20 1 0	010	0 0 0
Volume Module:	1				<u> </u>	-	Volume Module			!		 		-
. 0		1.00 1.00 1	1.00 1.00 1.00 94 0 16	1.00 1.00	00 1.00 1.00	1.00	Growth Adj:	1.00 1.00 1.00	00 1.00 1.00	00.1	1.00 1.00	1.00 1.	1.00 1.00 1	1.00
57	000		38	, m c	00	100	Added Vol:		000		38	478	102	000
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	24 20	00		5 O	0	10	PHF Volume: Reduct Vol:		00	00	0 386	478 0	65 1022 0 0	00
Reduced Vol: 575 PCE Adj: 1.00	548 21 1.00 1.00	1.00 1.00 1	530 383 19 1.00 1.00 1.00	19 0 1.00 1.00	0 0 74	1.00	Reduced Vol: PCE Adi:	0 0 0 0 1.00	0 0 0	0 0	0 386	478	65 1022	0 1.00
 :-	1.00 1.00 548 21	1.00	1.00	1.05	0 1.00 1.05 0 0 77		.:	1.00	1.00	-	1.00 1.05		1.05	1.00
Saturation Flow Module:	0061	0061			0061 0061 00	0061	Saturation Fl	Flow Module:				_		- 9
::	0.99 0.99		0.95	1.00	1.00		;;		1.00			0.85 0.1	0.95 1.00 1	1.00
Final Sat.: 3610	1812 69	0	1805	3800	0		Sat.:	0	•			_	3800	
Capacity Analysis Module: Vol/Sat: 0.16 0.30 0	s Module: 6 0.30 0.30	0.00		0.01 0.00	00.00	0.02	_ (g	ysis Module: 0.00 0.00 0.00	00.0 00.0 00	00.0	0.00 0.11	_	0.28	00.00
<pre>Crit Moves: Green/Cycle: 0.25 Volume/Cap: 0.65</pre>	**** 0.35 0.35 0.86 0.86	0.10 0.00 0 0.00 0 0.09 0.00 0	**** 0.45 0.25 0.41 0.86	0.45 0.00	**** 00 0.00 0.20 00 0.00 0.10	0.20	<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.00 0.00 0.00	00.000.0000	00.00	0.00 0.85	**** ** 0.85 0. 0.35 0.	**** 0.10 0.95 C 0.19 0.30 C	0.00
- 4			=					Service Module:				-		-
Delay/Veh: 22.7 User DelAdj: 1.00	27.1 27.1 1.00 1.00	0.0	33.9	-	0.0		Delay/Veh: User DelAdj:	0.0 0.0 0.0 1.00 1.00 1.00	1.001	н	0.0 0.8 1.00 1.00	1.1 26	26.7 0.1 1.00 1.00 1	0.0
AdjDel/Veh: 22.7 Queue: 15	27.1 27.1 16 1		12.2 33.9 11 12	9.9	0.0 0.0 21.1 0 0 0 0	21.1	AdjDel/Veh: Queue:	0.0 0.0	0.0 0.0 0.0	0.0	0.0 0.8		0.1	0.0
*****		*****	****	***	****	***	****	*******	*****	***	*****	****	*******	* * * *

Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

C-AM.CMD Tue Nov 5, 1996 13:07:09 Page	18-1 C-AM.CMD Tue Nov 5, 1996 13:07:09 Page 19-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	FISCO/Port Vision 2000 BIS/BIR Maximum Marine/Minimum Rail Alternative AM Peak Hour
**************************************	**************************************
**************************************	****** Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 21.2 ound Optimal Cycle: 81 Level Of Service: C
L - T - R L	· 班米米米拉拉拉拉米拉拉米拉米拉米拉米拉米拉拉拉拉拉拉拉拉拉拉拉拉拉拉拉拉拉拉
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign	Approach: North Bound South Bound East Bound West Bound idn Movement: L - T - R L - T - R L - T - R
Include Include	
Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 0 0 1 0 0 0 0 0	0 I Control: Split Phase Split Phase Protected Protected
Volume Module:	een: 10 20 20 10 20 20 10 20 20 10 20
0 0 89 30 0 0 0 0 0 140	6 Lanes: 1 0 1 1 0 1 1 0 1 0 1 1 0 1 1 0 1 0 1
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	L.O. Volume Module:
0 383 0 0 436 0 0 0 0 0	
	Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
1t: 0 383 89 30 436 0 0 0 0 140	6 Initial Bse: 9 0 0 678 48 6 65 234 12 0 152 44
USer Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 Added Vol.: 0 271 112 0 299 0 0 102 0 137 117 0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	reservation of the control of th
0 0 0 0 0 0 0 0 0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 0 383 89 30 436 0 0 0 140 0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
ed Volume Module:	PHF Volume: 9 271 112 678 347 6 65 336 12 137 269 449
**** **** **** ****	: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
XXXX XXXX XXXX XXXX XXXX XXXX	PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
1.10 1.00 1.00 1.1	MLF Adj: 1.00 1.05 1.05 1.05 1.00 1.00 1.05 1.05
XXXX XXXX XXXX XXXX XXXX XXXX	xxxx Final Vol.: 9 285 118 712 347 6 65 352 13 137 296 494
PCB: XXXX XXXX XXXX XXXX XXXX XXXX XXXX X	XXXX
200 00 12 420 0 0 0 124 55 50 50 50 50 50 50 50 50 50 50 50 50	•
cx xxxxx	t: 0.95 0.96 0.96 0.95 1.00 1.00 0.95 0.99 0.99 0.95 0.91
5.5 XXXX XXXXX XXXXX XXXXX	5.5 Lanes: 1.00 1.41 0.59 2.00 0.98 0.02 1.00 1.93 0.07 1.00 1.12
Outside: Model 0.	Final Sat:: 1805 2580 1068 3610 1868 32 1805 3628 134 1805 1943 3244
Capacity Module: Chflict Vol: xxxx xxxx xxxxx 472 xxxx xxxxx xxxx xxx	236 Capacity Analysis Module:
956 xxxx xxxx xxxx 284	1051 Vol/Sat: 0.00
XXXX XXXX XXXXX 1.00 XXXX XXXXX XXXX XXX	Crit Moves: **** **** ****
XXXX XXXXX XXXXX XXXXX XXXX XXXXX	: 0.20 0.20 0.20 0.30 0.33 0.33 0.10 0.24 0.24 0.12 0.26
Level Of Service Module:	#0:0 T#:0 T#:0 05:0 06:0 06:0 66:0 66:0
Stopped Del:xxxxx xxxxx 3.9 xxxx xxxxx xxxxx xxxxx 26.6 xxxx	3.4 Level Of Service Module:
6: * * * * * * D	Delay/Veh: 20.8 23.9 23.9 18.3 17.9 17.9 27.7 20.9 20.9 31.4 21.6
LT - LTR - RT LT - LTR - RT LT -	User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
	XXXXX
Shared IOS: * * * * * * * * * * * * * * * * * * *	***XXXX
ApproachDel: 0.0 0.3 0.0 25.6	

C-PM.CMD	Tue Nov 5, 1996 12:31:57	96 12:31:	57		-	Page 1-1		I able J./-ŏ								
	FISCO/Port Vision 2000		EIS/EIR				:	C-PM.CMD	1	Tue Nov 5,	ov 5, 1996 12:31:57	31:57	1 1 1		Page 1-2	-2
	Maximum Marine/Minimum Rail PM Peak Hour	m Rail Al Hour	Alternative	ve		1	i i i		Maxi	FISCO/Port Vision Maximum Marine/Minimum PM Peak	FISCO/Port Vision 2000 um Marine/Minimum Rail PM Peak Hour	EIS/EIR . Alternative	tive			
	Trip Generation Report	ion Repor	t.					i e		-	Rate	Rate	: 8	Trjps	Total	* 0£
	Forecast for PM Peak Hour	PM Peak E	four					# Subzone	Amount	t Units	uI	Out	In	Out	Trips	Total
Zone # Subzone	Amount Units	Rate R In	Rate 1 Out	Trips Ti In O	Trips 7 Out 7	Total \$ Trips To	% Of Total	Zone	 26 Subtotal	tal			. 190	228	418	7.3
1 New Harbor	1135.00 Employees Subtotal	90.0	0.22	i : 88 88 : 90 90	250	318	. 9. 9. 1. 9. 9.	27 7th St Harbr Zone 27	Sub	Truck	External 226.00	00 271.00	226	271 271	497	8.7
3 J.I.T. Zone 3	208.00 Employees Subtotal	0.10	0.36	21	75	96	1.7	28 Outer Harbor Zone 28	Sub	Truck	External 261.00	00 312.00	261	312	573 573	10.0
4 SP Rail Term Zone 4 1	n 210.00 Employees Subtotal	0.10	0.36	21	92	97	1.7	TOTAL					2342	3364	5706	100.0
6 Middle Harbr Zone 6	r 516.00 Employees Subtotal	90.0	0.22	31	114	145 145	2.5									
7 7th St Harbr Zone 7	t Harbr 613.00 Employees Zone 7 Subtotal	90.0	0.22	37	135 135	172	3.0									
8 Outer Harbor Zone 8	Harbor 706.00 Employees Zone 8 Subtotal	90.06	0.21	4 4 2 2	148	190	3.3 3.3									
10 New Park Zone 10	ark 1.00 Total Trips Zone 10 Subtotal	30.00	59.00	30	59	88 99	1.6 1.6									
11 New Harbor Zone 11	1.00 Trucks Inter 1 Subtotal	246.00 295.00	295.00	246 246	295 295	541 541	9.5									
16 Middle Harbr Zone 16	r 1.00 Trucks Inter 5 Subtotal	112.00 134.00	134.00	112	134	246 246	4. 4. E. E.									
17 7th St Harbr Zone 17	r 1.00 Trucks Inter 7 Subtotal	133.00 159.00	159.00	133	159	292	5.1									
18 Outer Harbor Zone 18	Harbor 1.00 Trucks Inter Zone 18 Subtotal	153.00 184.00	184.00	153 153	184	337	v. v.									
21 New Harbor Zone 21	1.00 Truck External 1 Subtotal	418.00	501.00	418	501 501	919 919	16.1 16.1									
23 J.I.T. Zone 23	1.00 Truck External 3 Subtotal	175.00	210.00	175 175	210	385 385	6.7									
24 SP Rail Term Zone 24	m 1.00 Truck External 4 Subtotal	178.00	213.00	178 178	213	391 391	6.9									
26 Middle Harbr	r 1.00 Truck External 190.00 228.00	190.00	228.00	190	228	418	7.3									
Traffix 6.8.030	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc.,	oc. Licen	sed to D	owling	Assoc.	, Oakland	pu	Traffix 6.8.0)306 (c)	1996 Dowl	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	sensed to	Dowling	J Assoc	., Oakl	land

C-PM.CMD

Zone

3-1			Total	Volume		754	1632		1701	1324	2385		408	1987	2395			68	3104	3172		852	1272	2124	ţ	1711	2190		0	1949	1949		1399	878	2277		1423	1711	3134
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			Westbound	hru R		0 0	0		ć	٥ ٥	0		c		0			0	341	341		88	260	348	Ġ	, 0	39		0	426	426		624	0	624		202	0	202
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	EIS/EIR Alternative		ਚ			20	20		c	391	391		74	429	503			13	229	248		131	0	131		10	13		0	0	0		210	247	457		0	79	79
1:57	EIS/EIR Alterna	port	Eastbound	hru R		00	0		•		0		c					0	498	498		215	217	432	;	, 0	14		0	624	624		454	0	454		157	0	157
1996 12:31:57		ant Rej four	Eas	Left Thru Right		0 1	157		c	9 2	97		223	120	343				405				0		Ċ	2 0	30			0		80			50		138		138
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Tue Nov	Port Ine/Mi	ning	Southbound	ıru Ri		109.	347		5	173	305	5	1010	7 7 7	447			18	144	162	Rd		0	0	,	670	670		0	0	0		23	0	23			134	134
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	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour				ma St.	0 0			St.	, , ,		ţ	ر د د		. 0		Exten		26		#7 Middle Harbor/New Mddl Hrbr	229	538	.67	St.	77	122	Harbor	0	508	508	W.Grand	0	110	110	Sth St./			. 079
	2		Northbound	n Rig	/ Burma	590	334 984		/ 14th	414	· =	,		, σ	479		7th St.	0	150	0	r/Nev	0	0		3rd					0		_		0					216 (
			North	Left Thru Right	S	200			O)		301 711		7.7c am						191 15		Harbo	95	0	92	s St.,	36	36 1041	w Mide	0	0	0				441	, 45 ac			154 23
CMD.			ខ្ន		#3 Maritime	77	n		#4 Maritime				1111				th St./				iddle	•			lelin			#9 7th/New Middle		ซ	_	#12 Maritime				םתינם אר# מחינם אר צר#			
C-PM.CMD			Volume	Type	#3 M	Base	Total		#4 W	base Added	Total	1	Σ d α π π	במקרק מקרק	Total		#6 7th	Base	Added	Total	#7 W	Base	Added	Total	#8 A	Base	Total	#9 7	Base	Added	Total	#12 1	Base	Added	Total	#	Base	Added	Total
Page 2-1									-																														
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4	EIS/EIR Alternative) - - -	Ď.	. .	; ;		30.0		30.0			0.0																									٠.		
12:31:5		Repor	xisti	14	1	;	11.0		11.0			0.0								20.0																			
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5, 19	t Vision 200 /Minimum Rai PM Peak Hour	stribution Report	Of Tr	Gates	9 !	t	17.0	17.0	17.0	17.0	0.0	0.0	9 0		20.00	20.0	20.0	20.0	20.0	20.0																			
Tue Nov	FISCO/Port Vision 2000 um Marine/Minimum Rail PM Peak Hour	Trip Dis	Percent Of Trips Existing	170 6	1 !	,		5.0				0.0	0.0		0 0	2.0	2.0	2.0	2.0	2.0																			
Tu	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	Tr.	Pe	u		•	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0																			
	Maxi			-	* :		0.0	. 0	0.0	0.0	. 0	50.4	50.4	4.00	* 0	0.0	0.0	0.0	0.0	0.0																			
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C-PM.CMD	0			Tue Nov	5,	1996 12:31:57	12:31	:57			Pa	Page 3-	81	C-PM.CMD	Ð			Tue	Tue Nov 5	, 1996	1996 12:31:57	:57			Pa	Page 3-3	m
! ! ! !	 	Ma	FI FXimum	SCO/P	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	t Vision 200 //Minimum Rai PM Peak Hour	1000 E	is/Ei	R ative	; ; ; 1 1		1 1 1 1					Maximu	ISCO/	Port V ine/Min	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	ZOOO E Rail A	EIS/EIR Alterna	tive				
Volume Type I	Nor Left T	Northbound Left Thru Right	1	Sout ft Th	Southbound Left Thru Right		East ft Th	Eastbound Left Thru Right	i	Westbo	3	nd Total Right Volume	Total Olume	Volume Type	Northbound: Left Thru Right	Northbound t Thru Rigl) 	Sou eft T	Southbound Left Thru Right		East eft Th	Eastbound Left Thru Right		West eft Th	Westbound Left Thru Right	_	Total Volume
#14 Union Base	on St.,	r L	t./ 1- 31	880 No	th R		31	97		32	31	34	892	#160 Base	0 0	00	0 0	0 0	0 0	0 0	0 0	o o	00	-105 -2	-259	0 0	-364
Added	00	0 7 194 36	360	О С	144	30	31	97	18	154			1125	Total	00	0	0	0	0	0 0					81		99
#15 7th Base	St./	I-880 NB	NB Ramps	\ \	nta	ge Rd. 205	0	108	0	0	53	-	569	#161 Base	0	0	0	,	105	0	0		-150	0	0	0	-255
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4-3		Total Volume	-728 860 132	-510 543 33	-1320 1244 -76	-1192 1070 -122	-754 831 77	-972 1085 113	-1472 1619 147	3 -208 2426 340	-2086 2426 340
Page	; ; ;	ink Total	-364 430 66	000	000	-391 381 -10	-163 148 -15	-47 60 13	000	-104 1213 170	-375 419 44
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C-PM.CMD		Volume Type	#160 Base Added Total	#161 Base Added Total	#165 Base Added Total	#170 Base Added Total	#177 Base Added Total	#178 Base Added Total	#182 Base Added Total	#201 Base Added Total	#204 Base Added Total
4-2		Total Volume	1784 467 2251	1138 2315 3453	770 3401 4171	636 1527 2163	4128 1908 6036	0 2367 2367	-670 0 -670	-844 975 131	-728 860 132
Page 4		ral tal	475 233 708	167 13 180	378 1158 1536	256 256 256	1822 '454 2276	0 1183 1183	000	-163 148 -15	-105 91 -14
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1:57	EIS/E Alter	EB Link Out To	61 0 61	258 700 958	0 700 700	000	537 81 618	0 196 196	-24 0 -24	000	-364 430 66
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Tue Nov	Port ine/M	SB Link Out To	North 259 0 259	Front 198 447 645	000	Rd. 69 447 516	age Rd 488 288 776	000	-188 0 -188	-259 340 81	000
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] Maxim	ink Total		NB Ramps / 200 207 381 316 581 523	I-880 SB Ramps 385 385 543 543 928 928	0 Fron' 307 763 1070	I-880 150 763 913	0 702 702	-291 0 -291	-422 487 65	-259 340 81
1		NB Link Out Tot	./ 5th 194 154 348	I-880 0 0	I-880 385 543 928	, I-880 115 316 431 1	Ave./ 1 3 316 319	0 383 383	-123 .	000	000
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C-PM.CMD		Volume	#14 Union St./ 5th Base 475 194 Added 79 154 Total 554 348	#15 7th Base Added Total	#16 7th St./ Base 0 Added 0 Total 0	#17 14th St./ I-880 Frontage Base 192 115 307 4 Added 447 316 763 316 Total 639 431 1070 320	#18 W.Grand Base 147 Added 447 Total 594	#134 Base Added Total	#138 Base - Added Total -	#158 Base - Added Total	#159 Base - Added Total

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Maximum National Maximum National Maximum National Maximum National Maximum National Maximum National Maximum National Maximum National Maximum National Maximum National Maximum St. Impact Analysis Report	Tue Nov 5, 1996 12:31:57
Intersection Losy Level Of Service Base Del/ V/ Del/ Closy Del/ Closy Del/ Del/ V/ Del/ Del/ V/ Del/ V/ Del/ V/ Del/ V/ Del/ V/ Del/ V/ Del/ V/ Del	FISCO/FOIC VISION 2000 BIS/BIR Maximum Marine/Minimum Rail Alternative FM Peak Hour
Threspection	EB Link WB Link In Out Total In Out Total
# 3 Maritime St./ Burma St. # 4 Maritime St./ 14th St. # 5 Maritime St./ 7th St. Extensio B 5.8 0.080 B 12.7 0.473 + 5.899 # 6 7th St./ 7th St. Extension B 5.8 0.080 B 12.7 0.473 + 6.898 # 6 7th St./ 7th St. Extension B 5.8 0.080 B 12.7 0.473 + 6.898 # 7 Middle Harbor/New Mddl Hrbr Rd B 13.5 0.296 C 21.3 0.830 + 7.841 # 8 Adeline St./ 3rd St. C 20.4 0.084 F 91.7 0.693 +77.346 # 9 7th/New Middle Harbor C 20.4 0.080 C 21.3 0.830 +7.841 # 12 Maritime St./ M.Grand Ave./ I-880 SB C 17.6 0.328 C 22.4 0.656 + 4.809 # 14 Union St./ 5th St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 + 3.250 # 15 7th St./ I-880 SB Ramps / Fron B 11.5 0.135 C 17.6 0.413 + 6.181 # 16 7th St./ I-880 SB Ramps # 17 14th St./ I-880 Frontage Rd. # 17 14th St./ I-880 Frontage Rd. # 19 0.000 D 2.5 0.000 + 0.000 # 18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505 C 22.3 0.671 + 1.232	870
# 4 Maritime St./ 14th St. B Maritime St./ 7th St. Extension B S.8 0.080 B 12.7 0.473 + 6.898 # 6 7th St./ 7th St. Extension B S.8 0.080 B 12.7 0.473 + 6.898 # 6 7th St./ 7th St. Extension B S.8 0.080 B 12.7 0.473 + 6.898 # 7 Middle Harbor/New Mddl Hrbr Rd B 13.5 0.296 C 21.3 0.830 + 7.841 # 8 Adeline St./ 3rd St. C 20.4 0.084 F 91.7 0.693 +71.346 # 9 7th/New Middle Harbor C 20.4 0.084 F 91.7 0.693 +71.346 # 12 Maritime St./ W.Grand Ave./ I-880 SB C 17.6 0.328 C 22.4 0.656 +4.809 # 14 Union St./ 5th St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 +3.250 # 15 7th St./ I-880 NB Ramps / Fron B 11.5 0.135 C 17.6 0.413 +6.181 # 16 7th St./ I-880 Frontage Rd. # 17 14th St./ I-880 Frontage Rd. # 18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505 C 22.3 0.671 + 1.232	000
# 5 Maritime St./ 7th St. Extension B 5.8 0.080 B 12.7 0.473 + 6.898 # 6 7th St./ 7th St. Extension B 5.8 0.018 D 29.1 0.699 +23.263 # 7 Middle Harbor/New Mddl Hrbr Rd B 13.5 0.296 C 21.3 0.830 + 7.641 # 8 Adeline St./ 3rd St. C 20.4 0.084 F 91.7 0.693 +71.346 # 12 Maritime St./ W.Grand Ave./ I- B 12.4 0.237 C 18.9 0.429 + 6.576 # 13 Adeline St./ 5th St./ I-880 SB C 17.6 0.328 C 22.4 0.656 + 4.809 # 14 Union St./ 5th St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 + 3.250 # 15 7th St./ I-880 SB Ramps / Fron B 11.5 0.135 C 17.6 0.413 + 6.181 # 17 14th St./ I-880 Frontage Rd. A 1.9 0.000 D 2.5 0.000 + 0.000 # 18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505 C 22.3 0.671 + 1.232	
# 6 7th St. / 7th St. Extension	0 -391 -391 -741 0 -741 0 381 381 839 0 839
# 7 Middle Harbor/New Mddl Hrbr Rd B 13.5 0.296 C 21.3 0.830 + 7.841 # 8 Adeline St./ 3rd St. C 20.4 0.084 F 91.7 0.693 +71.346 # 9 7th/New Middle Harbor 0.0 0.000 C 20.7 0.765 +20.722 # 12 Maritime St./ W.Grand Ave./ I-880 SB C 17.6 0.337 C 18.9 0.429 + 6.576 # 13 Adeline St./ 5th St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 + 3.250 # 14 Union St./ 5th St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 + 3.250 # 15 7th St./ I-880 NB Ramps / Pron B 11.5 0.135 C 17.6 0.413 + 6.181 # 16 7th St./ I-880 Frontage Rd. A 1.9 0.000 D 2.5 0.000 + 0.000 # 18 W.Grand Ave./ I-880 Prontage R C 21.1 0.505 C 22.3 0.671 + 1.232	-10 -10 98 0
# 8 Adeline St./ 3rd St. C 20.4 0.084 F 91.7 0.693 +71.346 # 9 7th/New Middle Harbor 0.0 0.000 C 20.7 0.765 +20.722 # 12 Maritime St./ W.Grand Ave./ I- B 12.4 0.237 C 18.9 0.429 + 6.576 # 13 Adeline St./ 5th St./ I-880 SB C 17.6 0.328 C 22.4 0.656 + 4.809 # 14 Union St./ St. St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 + 3.250 # 15 7th St./ I-880 NB Ramps / Fron B 11.5 0.135 C 17.6 0.413 + 6.181 # 16 7th St./ I-880 Frontage Rd. A 1.9 0.000 D 2.5 0.000 + 0.000 # 18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505 C 22.3 0.671 + 1.232	
# 9 7th/New Middle Harbor 0.0 0.000 C 20.7 0.765 +20.722 # 12 Maritime St./ W.Grand Ave./ I- B 12.4 0.237 C 18.9 0.429 + 6.576 # 13 Adeline St./ Sth St./ I-880 SB C 17.6 0.328 C 22.4 0.656 + 4.809 # 14 Union St./ 5th St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 + 3.250 # 15 7th St./ I-880 NB Ramps / Fron B 11.5 0.135 C 17.6 0.413 + 6.181 # 16 7th St./ I-880 Frontage Rd. A 1.9 0.000 D 2.5 0.000 + 0.000 # 18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505 C 22.3 0.671 + 1.232	, 0
# 12 Maritime St./ W.Grand Ave./ I- B 12.4 0.237 C 18.9 0.429 + 6.576 # 13 Adeline St./ 5th St./ I-880 SB C 17.6 0.328 C 22.4 0.656 + 4.809 # 14 Union St./ 5th St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 + 3.250 # 15 7th St./ I-880 NB Ramps / Fron B 11.5 0.135 C 17.6 0.413 + 6.181 # 16 7th St./ I-880 Frontage Rd. A 1.9 0.000 D 2.5 0.000 + 0.000 # 17 14th St./ I-880 Frontage R C 21.1 0.505 C 22.3 0.671 + 1.232	0 13 0 13
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	Maximu	FISCO/	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	m Rail Hour	EIS/E: Alter	IR native						Maxi	FISCO mum Ma:	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	t Vision 2000 /Minimum Rail PM Peak Hour		EIS/EIR Alternative				
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**************************************	######################################	nd ****	South Bound L - T -	und - R	East	st Bound T -	nd R	West Bound L - T - R	Bound	* -	Approach: Movement:	****** North Bo - T	* -	Sout	ound - R	* G '	******* East Bound - T -	nd R	***** West	********** West Bound L - T - R	* 5 K
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Volume Module Base Vol:	5 590			0	0		200			_ 0;	Volume Module Base Vol:		28	105 132	!	<u> </u>	0	- 0;	! '		290
Growth Adj: Initial Bse: Added Vol:	1.00 1.00 5 590 0 394	00.	1.00 1.00 0 109 0 238	1.00 0 89	1.00	000		00.1	0	00.1	<pre>Growin Ad): Initial Bse: Added Vol:</pre>	1.00 1.00 0 414 301 297	1.00 28 0	1.00 1.00 105 132 0 173	1.00	1.00 0 97	00.1	1.00 0 391	1.00 92 0	00.	1.00 290 0
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User Adj: PHF Adj:	1.00	1.00	44	1.00			1.00			1.00 1.00	User Adj: PHF Adj:		1.00		4 4	4 4			-		1.00
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Reduced Vol: PCE Adj:	984 1.00	1.00	0 347 1.00 1.00	1.00			1.00	~		1.00	Reduced Vol: PCE Adj:	301 711 1.00 1.00	1.00				1.00		-		1.00
MLF Adj: Final Vol.:	1.00 1.05 1 5 1033	1.05	1.00 1.05 0 365	1.05	1.00	1.00	1.00	1.00 1.	00.	1.00	MLF Adj: Final Vol.:	301 747	1.05	1.00 1.05	1.05	1.00	1.00	391	1.00 1.	00 1.	290
Saturation Flow Module:	•		0081 0081	0061	0	000	0061	0081 0081	! !	0061	Saturation Fl	Flow Module:	0061	1900 1900	1900	1900	0061	-	1900 1	1900	0061
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Volume/Cap:	0.01 0.44		0.00 0.26	0.26		- 1	_		:	0.00	Volume/Cap:		0.69		- :	=	- :			- :	0.34
Level Of Serr Delay/Veh: User DelAdj: AdjDel/Veh: Queue:	vice Module: 18.7 6.5 1.00 1.00 18.7 6.5 0 15	0.0	0.0 10.0 1.00 1.00 0.0 10.0 0 6	10.0	23.2 1.00 23.2 4	0.0	21.4	0.0 0 1.00 1. 0.0 0	0.0 0 1.00 1. 0.0 0	0.0 1.00 0.0 0.0 ****	Level Of Serv Delay/Veh: User DelAdj: AdjDel/Veh: Queue:	Service Module 1: 36.2 21.3 36.2 1.00 4dj: 1.00 1.00 10 19 10 19	21.3 1.00 21.3 21.3	31.2 23.7 1.00 1.00 31.2 23.7 3 8	23.7 1.00 23.7 23.7	20.7 1.00 20.7 3	0.0 1.00 0.0 0.0	5.5 1.00 5.5 6.5	8.5 (1.00 1. 8.5 (0.0 9 1.00 1. 0.0 9	9.1 1.00 9.1 5

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#5 Maritime St./ 7th St. Extension #5 Maritime St./ 7th St. Extension **Critical Vol./Cap.** (X): **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** **Include** *Include** ISCO/Port V Maximum Marine/Mi		o			FISC Maximum M	FISCO/Port Vision 2000 um Marine/Minimum Rail PM Peak Hour	00 EIS/EIR il Alternative r		
e:)	Level Of Servi 1994 HCM Operations Meth	c Computation Report od (Future Volume Alt t***********************************	* *		**************************************	Level 1994 HCM Operati ************************************	Of Service Comput ons Method (Futus ***********************************	Computation Report (Future Volume Alternative) ************************************	(AC)
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Protected Prot	*	**************************************	* Z * ,1 * .:	******** st Bound T - R	**************************************	Vorth Bound	**************************************	************* East Bound L - T - R	************ West Bound L - T - R
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36 0 0 0 0 0 75 223 0 74 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	701.mg Module.				Volume Modul				
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100 1.00 1	1.00 1.00 1.00 1.00	1.00	1.00	.00.	Growth Adj: Initial Bse:	1.00	1.00 1.00 1.0 31 18	0 1.00 1.00 1.00	1.00 1.00 1.00
100 1	396 479 0 0	116 120			Added Vol:	150 5	448 144 28	405 498 2	341 31
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 0 0 0 0	0 0			PasserByVol:	0 04	0 0 476 163 28	0 0 0 0 0 0 E V	0 0 0 0
1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00	1.00	.00.	User Adj:	1.00	1.00 1.00 1	1.00 1.00 1	1.00
432 479 0 0 447 191 343 0 503 0 0 0 Reduced Vol: 191 150 56 479 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00	1.00		PHF Adj:	1.00	1.00	1.00	1.00
100 1.00 1	432 479 0 0 0	191 343 0 0			Reduct Vol:	r 0 0	4/9 162 0 0	405 498	0 0 0 0
1.00 1.00	432 479 0	191 343	0		Reduced Vol:	150	479 162	405 498	341
1.05 1.05	1.00 1.00 1.00	1.00 1.00	1.00		PCE Adj:	1.00	1.00	1.00	1.00 1.00 1.00
100 100	1.03 1.05 1.00 1.00 1.10 1.10 1.10 1.10 1.10	1.00 1.03 191 353	00.4		MLF AGJ: Final Vol.:	157	479 162	405 547	39 358 319
Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: Saturation Flow Module: 1900 1900 1900 1900 1900 1900 1900 19						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-	
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2.00 2.00 0.00 0.00 2.00 1.00 2.00 0.00 0	1900 1900 1900 1900 1900 1900 1900	1900 1900	0061		Sat/Lane: Adjustment:			5 0.95 0.95 0.95	0.95 1.00 0.85
3610 3800 0 0 3800 1615 3610 0 1615 0 0 0 0 Pinal Sat.: 1805 2664 984 1805	2.00 2.00 0.00 0.00	1.00 2.00	0.00		Lanes:	1.46	1.00 1.00	1.00 2.00	2.00
Lysis Module: 0.12 0.13 0.00 0.012 0.12 0.10 0.00 0.31 0.00 0.00 0.00 0.26 0.25 0.00 0.00 0.26 0.66 0.40 0.00 0.66 0.00 0.00 0.47 0.25 0.00 0.00 0.47 0.18 0.25 0.00 0.47 0.00 0.00 0.47 0.25 0.00 0.00 0.47 0.18 0.25 0.00 0.47 0.00 0.00 0.47 0.25 0.00 0.00 0.47 0.18 0.25 0.00 0.47 0.00 0.00 0.47 0.25 0.00 0.00 0.47 0.18 0.25 0.00 0.47 0.00 0.00 0.47 0.25 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20	3610 3800 0 0	1615 3610	=	0	Final Sat.:	2664	1805 1900 1615	5 1805 3612 1803	1805 3800 1615
0.12 0.13 0.00 0.00 0.12 0.12 0.10 0.00 0.31 0.00 0.00 0.00 0.00 0.00	Tapacity Analysis Module:	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;			Capacity Anal			1	
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0.47 0.25 0.00 0.00 0.47 0.18 0.25 0.00 0.47 0.00 0.00 0.00 Volume/Cap: 0.38 0.29 0.29 0.94	0 26 0 52 0 00 0 00 00	0 66 0 40	00.00		Green/Cycle:	0.20			0.24 0.20 0.48
	0.47 0.25 0.00 0.00	0.18 0.25	0.00		Volume/Cap:	0.29	0.94 0.43	0.94 0.76	0.47
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Trico/Port Vision 2000 EIS/EIR m Marine/Minimum Rail Alternative PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour PM Feak Hour Critical Volume Alternative) Critical Volume Alternative) Critical Volume Alternative) (Y+R = 4 sec) Average Delay (sec/veh): 2.1.3 Level Of Service:	ive) ***** ********** 0.830 21.3 West Bound L T T Protected Include	FISC aximum M Level Operation St./	FISCO/Port Vision 2000 F Maximum Marine/Minimum Rail / PM Peak Hour	EIS/EIR Alternative	
1ve) ***********************************	ive) ***** 21.3 21.3 West Bound L T T F Protected Include	Level Of 1994 HCM Operation ************************************			1
1.00 1.00	::::::::::::::::::::::::::::::::::::::	************	Of Service Computation Report ons Method (Future Volume Alt ************************************	Computation Report (Future Volume Alternative) ************************************	***************************************
North Bound South Bound East Bound West Bound Movement: L	West Bound L T T R Protected Include	Cycle (sec): 100 Loss Time (sec): 12 (Y+R = Optimal Cycle: 92	Critical Critical Sec) Average I Level Of	Critical Vol./Cap. (X): Average Delay (sec/veh): Level Of Service:	0.693 91.7 F
Protected Protected Protected Protected Protected Rights: Include Include Include Include Include Include Include Include Include Include Include Include Include Rights: Include Incl	Protected Protected Protected Include	North L	South Bound L - T - R	East Bound L - T - R	West Bound L - T - R
10		Control: Split Phase Rights: Include	 Split Phase Include	nase ide	nase
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1.00 1.00		1: 0 0 1	0	. 0	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 0 0 0 432 131 351 348	36 1041	670 15	14	39
767 100 100 100 100 100 100 100 100 100 10	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
767 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Reduct Vol: 36 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 0 0 432 131 351 348	36 1041	670 15	14	39
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 0 0 0 0 0 0 0	0 %	43 670 15	30 14 13	89 39 78
1.00 1.00 1.00 1.00 1.05 1.05 1.00 1.05 1.00 MLF Adj: 1.05 767 0 0 0 454 138 351 365 0 Final Vol: 38	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1	1.00 1.00	1.00	1.00
767 0 0 0 0 454 138 351 365 0 FINAL VOIL: 38	1.00 1.00 1.00 1.00 1.05 1.05 1.00 1.05	1.05	1.05 1.05	1.00 1.00 1.00	1.00 1.00 1.00
Saturation Flow Mo 1900 1900 1900 1900 1900 1900 1900 1900	0 0 0 0 454 138 351 365	38 1093 	i	# T	
The color of the c		Flow Module:	- 00		
Lanes: 0.06 Control	1900 1900 1900 1900 1900 1900 1900 1900	0.99	1.00 1.00 1.00	0.95 0.93 0.93	06.0
0 1615 0 0 0 2827 859 1805 3800 0 Final Sat.: 114	0.00 0.00 0.00 0.00 1.53 0.47 1.00 2.00	0.06 1.74	1.84 0.04	0.52	0.39
Module:	0 0 0 0 2827 859 1805 3800	-	224 3497 79	1805 916 851	1512 663 1325
0.05 0.00 0.47 0.00 0.00 0.00 0.00 0.15 0.15 0.15 0.10 0.00 0.0			00000000	20 0 20 0 20 0	90:0 90:0 90:0
0.57 0.00 0.57 0.00 0.00 0.00 0.00 0.20 0.20 0.23 0.43 0.00 0.09 0.00 0.84 0.00 0.00 0.00 0.00 0.80 0.84 0.22 0.00	**** **** ****) ; ; ; ; ; ; ; ;	*	* * *
0.09 0.00 0.84 0.00 0.00 0.00 0.00 0.84 0.22 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.20 0.20 0.23 0.43	0.28	0.20 0.20 0.20	0.20 0.20 0.20	0.20 0.20 0.20
-	0.00 0.00 0.00 0.00 0.80 0.80 0.84 0.22	07:1 07:1			
Level Of Service Module: Delav/Veh: 6.4 0.0 16.3 0.0 0.0 0.0 0.0 29.1 29.1 33.2 11.5 0.0 Delay/Veh: 130.1 130	16.3 0.0 0.0 0.0 29.1 29.1 33.2 11.5		52.5 52.5 52.5		22.0
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/Veh: 6.4 0.0 16.3 0.0 0.0 0.0 0.0 29.1 29.1 33.2 11.5 0.0 AdjDel/Veh: 130.1	0.0 0.0 0.0 0.0 29.1 29.1 33.2 11.5	AdjDel/Veh: 130.1 130 130.1	52.5 52.5 52.5	21.0 21.0 21.0	2 1 2
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1594 MCA Operations Wetched (Photus Volume Alternative)		FISCC Maximum Ma)/Port Visic rrine/Minimu PM Peak	on 2000 im Rail Hour	EIS/EIR Alternativ	ď				Max	FISCO	/Port Vision rine/Minimu PM Peak		sis/Eir Alternati	.ve	! ! ! !	1 1 t t
100 100	1994 ***********************************	Level (HCM Operation ************************************	JE Service C DES Method (************************************	Computa Future	tion Report Volume Alt	: * * * * * * * * * * * * * * * * * * *	* * *	* * * * * * * * * * * * * * * * * * *	**************************************	1994 HCM (********* #12 Marit	Level O peratio ******	E Service Cons Method (1	omputat: Future ******	lon Repor Volume Al	ternati	* 1 * 1	
Control Cont	~ 1	100 8 (Y+R 58	C = 4 sec) A	ritica verage evel of	l Vol./Cap. Delay (sec f Service:	(X):	;	ر ر ر	Cycle (sec): Loss Time (sec) Optimal Cycle	1(3c):]	00 10 (Y+R 70	C	ritical verage I evel Of	Vol./Cap Delay (se Service:	. (X):		18.9 C
1	- -	orth Bound	South Bo	und - R	East Bo	ound - R	. ,,	und - R	Approach: Movement:	North E	Sound	South Bou	and R	East B	ound - R		Bound T
10 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	!	rotected	Protect Inclu	1	 Protect Inclu		Protect Inclu	.ed	Control: Rights:	 Protec Inc	ted	Protecte Inclu		Protec Incl	ted	Prot	ected
Volume V	Η.	0 0	° °	0	。。	н	0	0	Min. Green: Lanes:	000	-	10 20 0 0		010	-	2	. н
1860 10 10 10 10 10 10 10	!	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	:	1				Volume Module	; ; ; ;	! ! !	}	<u>.</u>	;	-	1	-
National Part National Par		1.00	7	1.00	1.00 1.00	1.00	0 0	1.00	Base Vol: Growth Adi:			90.		20 454		0 6	
Free Color	••	0 0	l	00	0 0	00	0 -	00	Initial Bse:			. o. c		١ `			
Fig. 1 10 10 10 10 10 10 10		00				00	. 0	. 0	PasserByVol:				0			† O	
1.00 1.00		0 0	-	0 6	0 624	0 6	н с	0 0	Initial Fut:	-		-				81.	
1,00 0 0 0 0 0 0 0 0 0		1.00		1.00	1.00 1.00	1.00		1.00	PHF Adj:							1.00.1	
Columbia Columbia		00		0 0		00	42	0 0	PHF Volume: Reduct Vol:	C)		N	23	45			
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0				0	0 624	0		. 0	Reduced Vol:								
Vol.: 0 0 508 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			1.00 1.00	1.00	1.00 1.00	1.00	0 0	1.00	PCE Adj:			1.00 1.00					
tion Flow Module: 100 1900 1900 1900 1900 1900 1900 1900	.:			20.	0 655	0	э н	0	Final Vol.:			9 23					
Maintain 1900 190	Saturation Flow	\ Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1			ow Module					!	-	
Majustment: 1.00 1.00 0.85 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Sat/Lane: 190			1900	1900 1900	1900	0	1900	Sat/Lane:	1900 1900							
Sat:: 1900 0 1615 0 0 0 0 3800 0 1805 3800 0 Pinal Sat:: 3610 289 1383 1805 884 884 1805 2640 2661 1805 3720		0.00	0.00 1.00	0.00	1.00 1.00	0.00	м O	0.00	Adjustment: Lanes:	0.95 0.86 2.00 0.17							
ty Analysis Module: ty Analysis Module: ty Analysis Module: ty Analysis Module: ty Analysis Module: to 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	-	0	0	0	0 3800	o ⁻	ın	0	Final Sat.:				-				
Crit Moves: **** Crit Moves: *** Crit Moves: *	Capacity Analysi	s Module:		- 0			, ,	 ! 0	Capacity Anal			1	_		!	,	1
Cycle: 0.00 0.00 0.41 0.00 0.00 0.00 0.028 0.51 0.00 Cycle: 0.00 0.00 0.41 0.00 0.00 0.00 0.028 0.51 0.00 Cycle: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.					***		* 1		Crit Moves:		>						
Lavel Of Service Module: Lavel Of Service Mo		0.00	0.00 0.00	0.00	0.00 0.23	0.00		00.0	Green/Cycle: Volume/Cap:								
Veh: 0.0 0.0 20.0 0.0 0.0 0.0 0.0 26.3 0.0 25.9 8.8 0.0 Delay/Veh: 21.8 17.6 17.6 23.6 21.2 23.4 16.5 16.5 28.6 19.4 in 18.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Level Of Service	 Module:	 	1		-		-	. 4	rice Modul	 : : :		-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Veh: 0.0 0.0 20.0 0.0 0.0 0.0 0.0 0.0 1.00 1.0			0.0 0.0	0.0	0.0 26.3	0.0		0.0	Delay/Veh:	21.8 17.6		23.6 21.2		3.4 16.5		28.6 19	
0 0 13 0 0 0 0 18 0 11 7 0 Queue: 11 1 2 0 1 1 0 11 11 2 16			0.0 0.0	0.0	0.0 26.3	0.0		0.0		21.8 17.6		23.6 21.2		3.4 16.5		28.6 19	
	Onene:	0 0 13	0		0 18			0	Onene:	11 1		0					

C-PM.CMD	Ľ	Tue Nov 5, 199	1996 12:31:58	31:58			Page	14-1	C-PM.CMD		Ţ	Tue Nov 5, 1	1996 12	12:31:58		Page 15	5-1
1	FISC Maximum M	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alterna PM Peak Hour	n 2000 n Rail Hour	EIS/EIR Alternative	r Ative	, 				Max	FISCO	FISCO/Port Vision Maximum Marine/Minimum PM Peak F	t Vision 2000 /Minimum Rail PM Peak Hour	EIS/EIR	e A		
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	omputa Future *****	tion Rer Volume *******	port Alteri	native)	1 * * * * * * * * * * * * * * * * * * *		Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	1994 HCM O	Level Of perations ********	Level Of Service Operations Method	Compute (Future ******	Service Computation Report Method (Future Volume Alternative ************************************	t ternati *****	*	# # # # # # # # # # # # # # # # # # #
**************************************	**************************************	.*************************************	***** ritica verage evel O	**************************************	Cap. (2 (sec/ve	x): ch):	**************************************	22.4 22.4 32.4	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 71	: 100 Sec): 11 (Y+	00 11 (Y+R 71	**************************************	Critica Average Level	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): c/veh):	0.199 15.7	ĕνn
**************************************	**************************************	South Bound	***** und - - R	**************************************	******* East Bound - T -	д В	West Bound	est Bound T R	Approach: Movement:	,	ound - R	South Bound	ound - R	×	ound - R	West Bound	und - R
Control: Rights:	rotected Ovl	Prot	1	Split	Split Phase Include		Split Phase Include	hase ude	Control: Rights:	Protected Include	ted ude	Protected Include	ted ude	Split Phase Include	hase ude	Split Phase Include	de c
Min. Green: Lanes:	1 0 1 1 0	1 0 1	0 70	_	н 20			ᆔ	Lanes:		٦,		-	1	-	. :	1 0
Volume Module		241 0	69	138 1	157	- 0	0 202	616	Volume Module: Base Vol:	le: 0 194	281	0 144	30	31 97	18	32 31	34
Growth Adj: Initial Bse:	1.00 1.00 1.0	1.00 1.0	1.00	_		1	Н	H	Growth Adj: Initial Bse:	1.00 1.00	Ч	1.00 1.00 0 144	1.0	1.0	1.0	1.0	1.00
Added Vol: PasserByVol:	154 216 670 0 0 0	0 0 134	00	00	00	79 4	458 0 0 0	00	Added Vol: PasserByVol:	00			0 0				00
Initial Fut: User Adi:	154 216 670	0 241 134	1.00	138 1	157	79 4	458 202	616 0.50	Initial Fut: User Adj:	: 0 194 1.00 1.00	360	0 144 1.00 1.00	1.00	31 97	1.00	186 31 1.00 1.00	34
PHF Adj:	1.00		1.00	1.00 1.		н			PHF Adj: PHF Volume:	1.00 1.00		1.00 1.00	1.00	31 97		1.00 1.00	1.00
Reduct Vol:	0 0	0	0						Reduct Vol:								0 5
Reduced Vol: PCE Adi:	154 216 670 1.00 1.00 1.00	0 241 134 0 1.00 1.00	1.00	138 1	157	1.00 1	458 202 .00 1.00	308	Reduced Vol PCE Adj:	1.00 1.00				1.00			1.00
MLF Adj: Final Vol.:	1.00	1.00	1.05		1.10 1.173	1.10 1	.00 1.05 458 212	1.05	MLF Adj: Final Vol.:	1.00 1.10 0 213	396	1.00 1.05 0 151	1.05	1.05 1.05 33 102	1.05	1.00 1.00 186 31	34
					!	<u>-</u>	;		Saturation	-		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Saturation r Sat/Lane: Adjustment:	1900 1900 1900 0.95 1.00 0.85	0 1900 1900 5 0.95 0.95	1900	1900	1900 1	40	900	1900		1900 1900				1900			1900
Lanes: Final Sat.:	1.00 1.00 1.00 1805 1900 1615	0 1.00 1.32 5 1805 2384	0.68	1.11	1.26 0 2275 1:	0.63 1	.00 0.79	1.21	Lanes: Final Sat.:	0.00 1.05	3336	0.00 1.65 0 3041	645	0.43 1.32 790 2442	0.25	1.00 1.00 1805 1900	1.00
Capacity Ana	Capacity Analysis Module: Vol/Sat: 0.09 0.11 0.41	_	0.06	0.08 0.08	1	_	.25 0.15	0.15	Capacity Analysis	alysis Modul	1]e: 0.12	0.00.00	0.05	0.04 0.04	0.04	0.10 0.02	0.02
<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.12 0.20 0.51 0.70 0.57 0.81	1 0.17 0.24 1 0.81 0.24	0.24	0.20	0.20 0	0.20 0	.31 0.31 .81 0.49	0.31	Cric Moves: Green/Cycle Volume/Cap:	0.00	0.37	0.00 0.37	0.37		0.20	0.32 0.32	0.32
Level Of Ser	1 80	=	1 1	<u> </u>	;		; 0	1 0	Level Of Service Module	rvice Modul	e:				21.6	16 7 18 2	- 2
Delay/ven: User DelAdj:	33.6 23.7 1.00 1.00		1.00	1.00		4 11			User DelAdj	1.00				1.00			1.00
AdjDel/Veh: Queue:		2 36.2 19.7 7 8 3	19.7		- 1	22.5	13 5	18.3	Adjbel/ven: Queue:	0.0 14.6	14.6	0 13.5	3 1	1 2	*	4 1	10.2
*****	****	****	* * * * *	****	# # #	* * * * *	**	i i i i i i i i i i i i i i i i i i i	****	***************************************		k k k t t		# # # # # # # # # # # # # # # # # # #	: : : :	: : : : : : : : : : : : : : : : : : :	: : :

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FISCO/Port Vision 2000 BIS/BIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************
	100 Critical Vol./Cap. (X): 5): 5 (Y+R = 4 sec) Average Delay (sec/veh): 35 Level Of Service:
North Bound South Bound East Bound West Bound L - T - R L - T - R L - T - R	Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R
Protected Protected Pr	Protected Protected Protected Pr
lude Ovi Include Include) 20 10 20 20 10 20 20 0 20	lude In 0 20 10
	Lanes: 0 0 0 0 0 0 0 0 0 0 2 0 1 2 0 2 0
Volume Module:	Volume Module:
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	.dj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
0 197 3 2 0 205 0 108 0 0 53 1 381 0 0 315 447 11 0 0 3 3 0	Initial Bse: 0 0 0 0 0 0 0 7 378 0 added Vol. 0 0 0 0 0 458 543 0 700
3 2 0 521 447 119 0 0 56	ut: 0 0 0 0 0 0 458 550 378 700
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	USef Aaj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
197 3 2 0 521 447 119 0 0 56	0 0 0 0 0 0 0 458 550 378 700
381 197 3 2 0 50 0 0 0 0 0 0 0 0 0 0 0 381 197 3 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5	Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Reduct Vol: 0 0 0 0 0 0 0 458 550 378 700
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
1.00 1.00 1.00 1.00 1.13 1.00 1.05 1.00 1.00 1.0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.05 1.00 1.03 1
392 197 3 2 0 589 447 124 0 0 59 1	Final Vol.: 0 0 0 0 0 481 550 389 735
dule: 1900 1900 1900 1900 1900 1900 1900 1900	dule: 1900 1900 1900 1900 1900 1900 1900 1900
1.00 1.00 0.95 1.00 0.85 0.95 1.00 1.00 1.00 1.00	ment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
2.00 0.98 0.02 1.00 0.00 2.00 1.00 2.00 0.00 0.00	Lanes: 0.00 0.00 0.00 0.00 0.00 0.00 2.00 1.00 2.00 2
Module:	Analysis Module:
20.0 20.0 0.00 0.00 0.00 0.00 0.00 0.00	VOL/SAL: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.
0.15 0.23 0.23 0.12 0.00 0.55 0.35 0.55 0.00 0.00 0.20 0.20 0.71 0.45 0.45 0.01 0.00 0.33 0.71 0.66 0.00 0.00 0.08 0.08	Green/Cycle: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.
Level Of Service Module: Delay/Veh: 29.0 21.6 21.6 25.2 0.0 8.1 20.9 6.8 0.0 0.0 21.0 21.0	Level Of Service Module: Delay/Veh: 0.0 0.0 0.0 0.0 0.0 0.0 2.9 4.0 21.9 0.1 0.0 Treat holive: 1 00 1 00 1 00 1 00 1 00 1 00 1 00 1
21.6 25.2 0.0 8.1 20.9 6.8 0.0 0.0 21.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.9 4.0 21.9 0.1

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C-PM.CMD Tue Nov 5, 1996 12:31:58 Page 18-1	C-PM.CMD Tue Nov 5, 1996 12:31:58 Page 19-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour
Level Of Service Computation Report 1994 HCM Unsignalized Method (Puture Volume Alternative) ***********************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************
	Cycle (sec): 110 (Y+R = 4 sec) Average Delay (sec)red): 22.3
	81
	Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R
Rights: Include Include Include Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 0 0 1 0 0 1	Control: Split Phase Split Phase Protected Protected
	een: 10 20 20 10 20 20 10 10 10 10 10 10 10 10 10 10 10 10 10
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
- 0	
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 115 0 7	Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 288 160 0 213 0 0 110 0 103 81
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 0 509 130 4 316 0 0 0 0 115 0 7	PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
0 %0	
XXXX XXXX XXXX XXXX XXXX XXXX	Vol: 75 360 160 759 213 6 86 387 3 103 537
* ITUCK/COMD: XXXX XXXX XXXX XXXX XXXX XXXX XXXX X	PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
XXXX XXXX XXXX XXXX XXXX	378 168 797 213 6 86 406 3 103 590
Trck/Cmb PCB: xxxx xxxx xxxx xxxx xxxx xxxx xxxx x	Saturation Flow Module:
ical Gap Module:	1900 1900 1900 1900 1900 1900 1900 1900
2.1 xxxx xxxxx xxxxx xxxx 3.4 xxxx	ment: 0.95 0.95 0.95 0.95 1.00 1.00 0.95 1.00 1.00 0.95 0.94
Critical Gp:xxxxx xxxxx xxxxx 5.5 xxxx xxxxx xxxxx xxxxx 7.0 xxxx 5.5	Lanes: 1.00 1.38 0.62 2.00 0.97 0.03 1.00 1.99 0.01 1.00 1.86 1.14 Final Sat.: 1805 2499 1111 3610 1848 52 1805 3772 28 1805 3317 2041
Cnflict Vol: xxxx xxxx xxxxx 639 xxxx xxxxx xxxx xxx	Capacity Analysis Module: Vol/Sat: 0.04 0.15 0.15 0.22 0.12 0.05 0.11 0.11 0.06 0.18 0.18
1.00 xxxx xxxx xxxx 0.99 xxxx 1	CS: **** **** ****
: xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 282 xxxx	: 0.22 0.22 0.32 0.32 0.32 0.10 0.24 0.24 0.12 0.26
[ave] Of Service Module.	VOLUME/Cap: 0.19 0.70 0.70 0.70 0.36 0.36 0.48 0.45 0.48 0.70 0.70 0.70 0.70 0.70
XXXX 4.7 XXXX XXXXX XXXXX XXXXX 21.5 XXXX 3	ervice Module:
 U	20.7 25.2 25.2 20.4 17.1 17.1 29.0 21.3 21.3 28.0 22.9
LUIN - KI LII - LUIN - KI LUI - LUIN - KIXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX	25.2 25.2 20.4 17.1 17.1 29.0 21.3 21.3 28.0
XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX	2 10 5 20 5 0 2 10 0 3 15
	· ************************************
ApproachDel: 0.0 0.1 0.0 20.5	
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Table J.7-9

D-AM.CMD	Tue Nov 5, 19	1996 13:07:18	7:18		! ! ! !	Page 1-1	-1	D-AM.CMD Tue Nov 5, 1996 :	1996 13:07:18		Page 1-2
	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	/ision 2000 E Harbor Fill Peak Hour	SIS/EIR Altern	ative				FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative	2000 EIS/EIR Fill Alternati	ve	; ; ; ; ; ; ; ; ;
1	Trip Generation Report	ion Repo	rt	, ; ; ; ;	 	1 1 1 1 1	1 1 1 1	AM Feak Hour	our		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Forecast for	for AM Peak Hour	Hour					Zone # Subzone Amount Units II	Rate Rate Tr In Out	Trips Trips In Out	Total % Of Trips Total
Zone # Subzone	Amount Units	Rate	Rate	Trips In	Trips	Total % Of Trips Total	% Of Total	Zone 28 Subtotal		323 343	666 10.5
1 New Harbor Zone 1	1088.00 Employees Subtotal	0.26	0.05	283 . 283	54 54	337 337	55 55 5. 35	TOTAL		. 3443 2875	6318 100.0
3 J.I.T. Zone 3	343.00 Employees Subtotal	0.40	60.0	137	31	168 168	2.7				
6 Middle Harbr Zone 6 S	r 516.00 Employees	0.26	0.05	134	26 26	160	2.5				
7 7th St Harbr Zone 7 S	t Harbr 613.00 Employees Zone 7 Subtotal	0.26	0.05	159	31	190	3.0				
8 Outer Harbor Zone 8	Harbor 706.00 Employees Zone 8 Subtotal	0.26	0.05	184 . 184	35 35	219	3.5				
10 New Park Zone 1	ark 1.00 Total Trips Zone 10 Subtotal	29.00	19.00	22 6	19	4, 4, 80 80	8.0				
11 New Harbor Zone 11	1.00 Trucks Inter .1 Subtotal	279.00	297.00	279	297	576 576	9.1				
16 Middle Harbr Zone 16	v 1.00 Trucks Inter 6 Subtotal	132.00 141.00	141.00	132	141	273 273	4. 4. 8. 3.				
17 7th St Harbr Zone 17	or 1.00 Trucks Inter 7 Subtotal	158.00 168.00	168.00	158	168	326 326	5.5.		•		
18 Outer Harbor Zone 18	or 1.00 Trucks Inter 8 Subtotal	181.00	193.00	181	193	374	5.9 6.9				
21 New Harbor Zone 21	1.00 Truck External 497.00 529.00 11 Subtotal	497.00	529.00	497	529	1026 1026	16.2 16.2				
23 J.I.T. Zone 23	1.00 Truck External 431.00 459.00	431.00	459.00	431	459 459	890 890	14.1 14.1				
26 Middle Harbr Zone 26	1.00 Truck External Subtotal	236.00 251.00	251.00	236	251	487	7.7				,
27 7th St Harbr Zone 27	or 1.00 Truck External	280.00	298.00	280	298 298	578 578	9.1				
28 Outer Harbor	or 1.00 Truck External 323.00 343.00	323.00	343.00	323	343	999	10.5				
Traffix 6.8.03	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc.,	oc. Licer	sed to	Dowlin	g Assoc	., Oakland	and	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	Licensed to Dov	wling Assoc	., Oakland

D-AM.CMD

## Particle Particle	PISC Subject to the control of the	Tue Nov 5, 1996 13:07:19	Page 2-1	D-AM.CMD	e	, , ,	1	Tue Nov	5,	1996 13:07:19	:07:15	1	! ! !	1 1 1	Page	3-1
### Park Houring Accessment Report Of Trips Existing 122 13 14 15 16 ###################################	Continuing Notinin	0 E					H E4	SCO/Po Redu	rt Visi	on 200 bor Fi	D EIS,	EIR	Ve	1 1 1 1	1	
15 16 16 14:0	15 16	Trip Distribution Report						Turr	ing Mov AM Pea	ement k Hour	Report					
13	## 15 16 16 ## 15 16	ercent Of Trips Existing		Volume	Nort	hbound		South	bound Fight		astbou	ind Pight	1.0 f ¥	stbou	nd Right	Total
17.0 23.0 11.0 20.0 14.0 20.0 23.7 20.0	## Mailing St. / Burna St. Busse S. / Burna St. Burna St.	o gates 12 13 14 15 1		Dod.	יים דר זוו	614 11 7		1	n vigit			VI AIIC	145		31161	
17.0 23.0 11.0 30.0 14.0 Abbet 23.0 23.0 23.7 24.0	17.0 23.0 11.0 30.0 14.0			#3 Mari	time St	./ Bur					c	u	c	c	•	375
17.0 23.0 11.0 30.0 14.0 44	17.0 23.0 11.0 30.0 14.0 Total 5 331 0 0 674 178 107 0 17.0 12.0 11.0 30.0 14.0 Base 0 10 10 10 0 28.1 106 82 0 10.0 23.0 11.0 30.0 14.0 Base 0 10 17 1 0 0 28.1 106 82 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	17.0 23.0 11.0 30.0		Base	(1)	53.8						n o	00	0	00	925
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Table J.7-9 (Continued)

Tue Nov 5, 1996 13:07:19 PISCO/Port Vision 2000 BIS/BIR	FISCO/Port Vision 2000 BI	FISCO/Port Vision 2000 EI	FISCO/Port Vision 2000 EI	J/Port Vision 2000 EI	t Vision 2000 EI	ion 2000 EI	 100 EI	,	S/EIR	1	1 1 1		1	1	D-AM.CMD		1		FISCO	CO/Port	FISCO/Port Vision 2000 EIS/EIR	2000	EIS/E	IR	1	1 1 1		
Reduced Harbor Fill Alternative AM Peak Hour	Reduced Harbor Fill Alternative AM Peak Hour	Reduced Harbor Fill Alternative AM Peak Hour	Reduced Harbor Fill Alternative AM Peak Hour	Reduced Harbor Fill Alternative AM Peak Hour	ed Harbor Fill Alternative AM Peak Hour	rbor Fill Alternative ak Hour	rill Alternative ur	lternative	ative	1 1 1 1 1 1	1	į	! ! !	1 1 1	1 1 1 1	1 1 1 1			ex.	educed AN	Reduced Harbor Fill Alternative AM Peak Hour	r Fil. Hour	l Alte	rnati	Je Je			
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-180 0 -180 0 0 0 0 -358 -358 -178 0 -178 210 0 210 0 0 0 0 381 171 0 171 30 0 0 0 23 23 -7 0 -7	-180 0 0 0 0 -358 -358 -178 0 210 0 0 0 381 381 171 0 33 0 0 0 23 23 -7 0	0 0 0 0 -358 -358 -178 0 0 0 0 0 381 381 171 0 0 0 0 0 23 23 -7 0	0 0 0 0 -358 -358 -178 0 0 0 0 0 381 381 171 0 0 0 0 0 23 23 -7 0	0 0 0 -358 -358 -178 0 0 0 0 381 381 171 0 0 0 0 23 23 -7 0	0 0 -358 -358 -178 0 0 0 361 381 171 0 0 0 23 23 -7 0	0 -358 -358 -178 0 0 381 381 171 0 0 23 23 -7 0	-358 -358 -178 0 381 381 171 0 23 23 -7 0	-358 -178 0 381 171 0 23 -7 0	-178 0 171 0 -7 0	000			78 - 71 -7	716 761 45	#204 Base Added Total	000	-580 655 75	-580 655 75	-932 1046 114	000	-932 1046 114	000	000	000	000	-352 392 40	-352 392 40	-1864 2093 229
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D-AM.CMD		Tue Nov	v 5, 19	Tue Nov 5, 1996 13:07:19	19		Pa	Page 4-5	10	D-AM.CMD	Tue Nov 5	Tue Nov 5, 1996 13:07:19	6		Page 5-1
		FISCO/Port Reduce	t Vision 200 ed Harbor Fi AM Peak Hour	FISCO/Port Vision 2000 BIS/BIR Reduced Harbor Fill Alternative AM Peak Hour	S/EIR	Ne v					FISCO/Port V Reduced	FISCO/Port Vision 2000 BIS/BIR Reduced Harbor Fill Alternative AM Peak Hour	/BIR ternative	1 1 1 1 1 1	
Volume NB Type In Out	NB Link In Out Total	SB Link In Out Total	ink Total	;	EB Link In Out Total	WB 1 In Out	::3	nk Total	Total Tolume		Impact A.	Impact Analysis Report Level Of Service	! ! ! ! ! ! ! !	; ! ! !	1 4 1 1 1 1 1 1 1 1 1
#244										Intersection		Base Del/ V/	Future Del/	e,	Change. in
000	000	-288 -312 -600 - 0 0 0	009-	-359 -333		-45			-1384	# 3 Maritime St./ Burma St.	Burma St.	LOS Veh C B 6.3 0.089	LOS Veh C B 8.5 0.267		+ 2.127 D/V
lotal 0	5	715- 887-	009-	255- 755-	269-		- / 15-	16- 1-	-1384	# 4 Maritime St./ 14th St.	14th St.	C 15.0 0.161	C 20.5	0.807 +	5.511 D/V
										# 5 Maritime St./	5 Maritime St./ 7th St. Extensio	B 12.7 0.071	C 19.0 0.926	+ 926	6.292 D/V
										# 6 7th St./ 7th St. Extension	St. Extension	B 11.8 0.000	C 15.7 0.819		+ 3.884 D/V
										# 8 Adeline St./ 3rd St.	3rd St.	B 8.7 0.064	F 82.2 0.673		+73.447 D/V
										# 9 7th/Middle Harbor Rd	rbor Rd	C 15.8 0.000	C 16.7 0.643		+ 0.833 D/V
										# 10 New Harbor/Mid Harbor Rd	d Harbor Rd	0.0 0.000	D 25.1	0.888 +2	+25.103 D/V
	•									# 12 Maritime St./ W.Grand Ave./ I-	W.Grand Ave./ I-	B 12.0 0.242	C 16.6 0.525		+ 4.626 D/V
										# 13 Adeline St./ 5th St./ I-880 SB	5th St./ I~880 SB	C 18.3 0.236	C 24.3 0.838		+ 6.070 D/V
										# 14 Union St./ 5th St./ I-880 Nort	h St./ I-880 Nort	C 16.4 0.104	C 17.6	4 568.0	+ 1.212 D/V
										# 15 7th St./ I-880	7th St./ I-880 NB Ramps / Fron	B 13.0 0.366	C 21.3 0.565	.565 +	8.317 D/V
										# 16 7th St./ I-880 SB Ramps	0 SB Ramps	A 0.1 0.020	A 1.4 0.414		+ 1.319 D/V

3.0 0.000 + 0.000 V/C C 21.7 0.456 + 1.890 D/V

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2.8 0.000

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17 14th St./ I-880 Frontage Rd.

18 W.Grand Ave./ I-880 Frontage R C 19.9 0.237

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D-AM.CMD		Ţŗ	Tue Nov 5,	1996	1996 13:07:1	19			Page	8-1	D-AM.CMD		-	Tue Nov	2,	1996 13:	13:07:19		<u>й</u>	Page 9-:	н
		FISCO	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	t Vision 200 ed Harbor Fi AM Peak Hour	000 EI: Fill A.	S/EIR lterna	ıtive						FIS	FISCO/Port Reduced	t Vision 200 ed Harbor Fi AM Peak Hour	n 2000 or Fill	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	. ve			1 1 1
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) #5 Maritime St./ 7th St. Extension	meration ****** The St./** ******* The St./** ********	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	ce Comp od (Fut: ****** . Exten:	utation ure Voi ******* sion	n Repc lume A *****	ort Nlterne *****	ttive)		;	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	1994 HCM ****** #6 7th	Level Of Service Moperations Method ***********************************	Of Senions Me	rrvice Com fethod (Fu ******* Extension	omputa Future ****** on	Level Of Service Computation Report M Operations Method (Future Volume Alternative) ************************************	ernati	+ + +		! * * ! * * ! * *
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 ec): 8 e: 116	00 8 (Y+R = 16	. 4 se	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	ol./Ca lay (s ervice	tp. (x)		0.926 19.0 C	w O D	Cycle (sec): Loss Time (sec) Optimal Cycle:		100 8 (Y+R 70	۲. 4.	sec) A	Critica Average Level O	Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	<pre>Cap. (X): (sec/veh): ce:</pre>		0.819 15.7 C	; -
Approach: Movement:	North Bo	ound - R	Sout}	South Bound	.i	East B	East Bound	1	West Bound	und - R	Approach: Movement:	North L -	North Bound	ў л	South Bound	und - R	East Bound	und - R	West	West Bound	ب بر
Control:	Protected	ed de	Prot	Protected Ov1	<u>-</u>	Protected	cted	д 	Protected Include	 ed de	Control: Rights:	Prote	Protected Include	-	Protected Include	ed ed de	 Protected Include	 ed de	Prot	Protected Ovl	1
Min. Green: Lanes:	10 20	0	000	0	20 1	0 0	0	0	0 0	000	Min. Green: Lanes:	0	0	0 10	0	20	10 20 2	20	0 0	20	20
odul			1	:	<u>:</u>) 1 1 1		-		: .	Volume Module	<u>.</u>	† † † †	<u> </u>			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1			<u> </u>
Base Vol: Growth Adj:	159 0 1.00 1.00	1.00	0 0 1.00 1.00	-		69 0 1.00 1.00	.i	37 0 00 1.00	1.00	1.00	Base Vol: Growth Adj:	1.00 1.0	00 1.00	0 1.00	1.00	1.00	1.00 1.00	1.00	1.00 1	1.00 1.	54 1.00
Initial Bse: Added Vol:	159 0 947 335	00	00	384 27	334 6 279 24	69 240	0 868	37 0 168 0	00	00	Initial Bse: Added Vol:	00	00	0 0	0 0	632	0 0 577 303	00	0 0	375 7	54 705
PasserByVol:	0	0 (0 (PasserByVol:	0 (0 (0 (0 1
Initial Fut: User Adj:	1.00 1.00	1.00	0 384 1.00 1.00	ri		309 0 1.00 1.00	0 905	0 1.00	1.00	1.00	Initial Fut: User Adj:	1.00 1.00	1.0	0 620	1.00	1.00	1.00 1.00	1.00	1.00 1	375 ; 1.00 1.	759 1.00
PHF Adj:	1.00 1.00	1.00	1.00 1.			1.00 1.00		1.00	1.00	1.00	PHF Adj: PHF Volume:	1.00 1.00	1.0		1.00	1.00	1.00 1.00	1.00	1.00 1.		1.00
Reduct Vol:		0								0	Reduct Vol:	0				0		0			0
Reduced Vol:	1106 335	0 0	0 384	-		309 0	0 905	35 00	0 6	00 [Reduced Vol:	0 0 1	0	0 620	00 1	632	577 303	0 0	000	375 7	759
MLF Adj:	4 (7)	1.00	1.00 1			03 1.00		i -i		1.00	MLF Adj:	1.00 1.00			1.00	1.00	1.03 1.05	1.00			1.05
Final Vol.:	1139 352	0	0 -	403 6.	613 31	318	0 905	5 0	0	0	Final Vol.:	0	0	0 638	0	632	594 318	0	0 !	375 7	797
Saturation Flow Module: Sat/Lane: 1900 1900	low Module: 1900 1900	1900	1900 1900	1900 1900	_ `	1900 1900	1900	1900	1900	1900	Saturation Flow Module Sat/Lane: 1900 1900	low Module 1900 1900	Le:	1900	1900	1900	1900 1900	1900	1900 19	1900 19	1900
Lanes:	2.00 2.00		0.00			2.00 0.00		. 0		00.0	Lanes:	0.00.00.0				1.00		0.00	0.00		2.00
Capacity Analysis Module:	 ysis Modul	1		!	_		- ;	<u> </u>			Capacity Analysis Module:	lysis Mod	lule:	=						1	_
Vol/Sat: Crit Moves:	0.32 0.09	0.00	0.00.0	0.11 0.38	38 0.09	00.0 60	0.56	00.00	0.00	0.00	Vol/Sat: Crit Moves:	0.00 0.00	00.00	0.18	3 0.00	0.39	0.16 0.08	0.00	0.00	0.20 0.	0.25
<pre>Green/Cycle: Volume/Cap:</pre>	0.35 0.65 0.91 0.14	0.00	0.00 0.0	0.31 0.57 0.35 0.66		27 0.00 33 0.00	00 0.61	0.00	0.00	0.00	Green/Cycle: Volume/Cap:	0.00 0.00	00.00	0.48	00.00	0.48	0.20 0.44 0.82 0.19	0.00	0.00.0	0.24 0.0.82 0.	0.72
Level Of Service Module: Delay/Veh: 27.7 4.3	 vice Module 27.7 4.3	0.0	0.0 17.5	;		0.0 0.	1	- 0		0.0	Level Of Serv Delay/Veh:	Service Module		_		19.3		0.0		1	3.4
User DelAdj: AdjDel/Veh:	27	1.00		ᆑ 줘		1.0	-i -i	9 0.0	0.0	0.0	User DelAdj: AdjDel/Veh:	0.0 0.0	0.0 0.0	1.00	1.00	1.00	1.00 1.00 29.8 11.0	0.0	1.00 1.		3.4
Queue: 34	34 4	4 * * * * * * * * * * * *	0 9 12 7 0 *****************	. * * * *	12	7	*	25 0	0 * * * *	0 * * * * *	Queue:	0 ***	****	111	0 * * * * * 1	16	17 5	0 * * * *	0 **	11	e * *

D-AM.CMD Tue Nov 5, 1996 13:07:19 Page 10-1	D-AM.CMD Tue Nov 5, 1996 13:07:19 Page 11-1
FISCO/Port Vision 2000 BIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour
ve) ****	ce Computation Report od (Future Volume Alternative)

**************************************	Approach: North Bound South Bound East Bound West Bound Movement: L - T - R
hase Split Phase Split Phase Unde Include 10 20 10 20	cted lude 0
Lanes: 0 1 0 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0 1	Lanes: 1 0 0 0 1 0 0 0 0 0 0 1 1 0 1 1 0 1 0
le: 8 0 31 26 0 26 8 6 29 50 59	0 0 0 0 0 0 0 0 0 0 0 0 0
: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	e: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
eut: 8 793 31 26 1048 26 8 6 29 50 59 : 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 8	Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 8 832 33 27 1100 27 8 6 29 53 62 59	Final Vol.: 17 0 368 0 0 0 0 538 4 399 639 1
n Flow Module:	Saturation Flow Module:
ne: 1900 1900 1900 1900 1900 1900 1900 190	t: 0.95 1.00 0.85 1.00 1.00 1.00 1.00 0.95 1.00 0.95 1.00 1.00 0.95 1.00 1.00 0.95 1.0
. 34 3585 142 89 3622 89 1053 790 1615 1089	0 1615 0 0 0 3772 28 1805 3794
Capacity Analysis Module: Capacity Analysis Module: Vol/Sat: 0.23 0.23 0.30 0.30 0.30 0.30 0.01 0.01 0.02 0.05 0.05 0.05 0.05 0.05 0.05 0.05	Capacity Analysis Module: Vol/Sat: 0.01 0.00 0.23 0.00 0.00 0.00 0.14 0.14 0.14 0.22 0.17 0.17 Crit Moves: ****
: 0.21 0.21 0.21 0.27 0.27 0.27 1.12 1.12 1.12 1.12 1.12	Green/Cycle: 0.35 0.00 0.35 0.00 0.00 0.00 0.00 0.22 0.22 0.34 0.57 0.57 Volume/Cap: 0.03 0.00 0.64 0.00 0.00 0.00 0.00 0.64 0.64
Level Of Service Module: Delay/veh: 91.7 91.7 91.7 86.3 86.3 86.3 20.8 20.8 21.1 21.8 21.8 21.8 User DelayAdi: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Level Of Service Module: Level Of Service Module: Delay/eh: 13.6 0.0 19.2 0.0 0.0 0.0 24.0 24.0 19.5 7.4 7.4 0.4 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
91.7 91.7 91.7 86.3 86.3 86.3 20.8 20.8 21.1 21.8 21.8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13.6 0.0 19.2 0.0 0.0 0.0 24.0 24.0 19.5 7.4 0 0 9 0 0 0 0 14 0 10 9
4	的法的法律法律的法律法律法律法律法律法律法律法律法律法律法律法律法律法律法律法

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D-AM.CMD		Tue	Tue Nov 5,	1996	1996 13:07:1	19		Page	12-1	D-AM.CMD		Tue	Tue Nov 5, 19	1996 13:	13:07:19		Page 13	3-1
		FISCO/	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	t Vision 200 ed Harbor Fi AM Peak Hour	000 EI:	S/EIR lternat	ive					FISCO/ Re	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern AM Peak Hour	fision 2000 Harbor Fil Peak Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	l ve		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternativ ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative: ************************************	vel Of ration ******	Level Of Service Computation Report perations Method (Future Volume Alt armor/Mid Harbor Rd	ce Compused (Futi	utation ure Vol	n Repor lume Al	t ternat: ******	ive)	*	Leve 1994 HCM Opera ************************************	Lev 1994 HCM Oper ************************************	Level Of perations ********	Service Method	Computa Future	Service Computation Report ***********************************	ernati	70)	*
***************************************	********	****	******	******	*****	*****	*****	***	*********	***************************************	********	*****	********	*****	********	****	********	****
Cycle (sec):	100	± 8+∀)		Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh)	ical Vo	Critical Vol./Cap. (X):	(X):	0.1	0.888	Cycle (sec): Loss Time (sec):	-	.00 10 (Y+R =	O 4 Sec	ritica	Critical Vol./Cap.	(Cap. (X):	0.525	ın va
Optimal Cycle:	94		- 1	Leve]	l of se	Level Of Service:		Q	۵	Optimal Cycle:		; ;		Level 0	Level Of Service:		U	
Approach:	£ K	nd	South	South Bound		East Bound	puno		Sound	Approach:	: -	nd	South Bound	pund	East Bound	pund		nnd
Movement:	L - T -	۳ - I	- - -	T - R	- I	H !	2	L - T	۳ - ا	Movement:	. T . 1	<u>ا</u> ہم	L - 1	24	T - 1	- R	T - 1	۲. ا
Control:	 Protected	- ''	Prot	Protected	=	Protected	ted	Protected	sted	Control:	Protected	- -	Protected	ed	Protected	ed	Protected	- pa
Rights:	Ov1	0.0	i c	Include	c	Include	ude	Incl	Include	Rights: Min Green:	Include	9 00	Include	ide 20	Include	ıde 20	Include	de 20
Lanes:	0		0	0	0	, 0	н	0	0	Lanes:	0	0	0	, 0 1	0	1 1	0	1 0
	1 1 1 1 1 1 1		1		<u>-</u>	1 1 1 1 1 1 1	-				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
Volume Module Base Vol:	0	0	0	0	0	0	0	0	0	Volume Module: Base Vol:	e: 0 33	0	16 28	47	48 394	438	0 300	Ð
Growth Adj:	1.00			1.00 1.00	00 1.00	1.0	1.0	1.00 1.0	1.0	Growth Adj:	1.00 1.00	1.00	ä	1.00	1.00 1.00	1.00	1.00 1.00	1.00
Initial Bse:	0	0	0	0	0				0 0	Initial Bse:	m	٥	71	47	33	438	30	σ.
Added Vol:		512	0 0	0 (0 0		6 6	-1		Added Vol:	297 0	e 0	0 0	0 0	0 0	484	81 0	0 0
FasserByvol:	0 0	51.0	0 0	.	,	9 6	9 0	660 1	0 0	Thitial Fut:	297 33	9 0	C	47	3.9	922	81 300	ാത
User Adi:	1.00		-	.00 1.00	00 1.00	1.0	_	1.00 1.	1.0	User Adj:	Ä	1.00	Ч.	1.00		7	7	1.00
PHF Adj:			-	.00 1.0		00 1.00		1.00 1.		PHF Adj:	٠į	1.00	H.	1.00		_	_	1.00
PHF Volume:		512	0	0 (0 (39	660 1		PHF Volume:	m	63	16 28	47	48 394	922	30	o (
Reduct Vol:	0 0	0 1	o c	5 C	0 0	2 6	0 0 0	0 0	0 0	Reduct vol:	0 0	ם ני	0 0	47	48 394	922	81 300	5
PCE Adi:	1.00	1.00		1.00 1.00		1.0	Н	1.00 1.	1.0	PCE Adj:	÷		Η.	1.00	-	1.00	-	1.00
		1.00			-	.00 1.00		1.00		MLF Adj:			_	1.00	1.00 1.00	1.05	1.00 1.05	1.05
.:.	0	512	0	0		0 3	399	660 18	o -	Final Vol.:	306 33	63	16 28	47	48 394	968	81 315	۰ _
Saturation Flow Module	low Module.	1 - 4 -					:		-	Saturation Flow Module	low Module:					1	1 1 1 1 1 1 1	
Sat/Lane:			1900 1900	900 1900		1900 1900		1900		Sat/Lane:				1900	1900 1900	1900		1900
Adjustment:	1.00		1.00 1.			00 1 00		0.95		Adjustment:	06.0			0.91		0.85		1.00
Lanes: Final Sat.:	1.00 0.00	1.00	0.00.00.0	00.00		0.00 1.00 0 1900	1.00	1.00 2.00	00.00	Lanes: Final Sat.:	3610 588	1122	1.00 0.37	1084	1805 1900	3230	1.00 1.94	106
		=	, , , , , ,		=		- !						1 1 1 1 1 1					
Capacity Analysis Module: Vol/Sat: 0.20 0.00 0	Lysis Module 0.20 0.00 (0.32	0.00.0	0.00 0.00		0.00 00.00	0.25	0.37 0.00	00.00	capacity Analysis Modute Vol/Sat: 0.08 0.06	1ysis Module 0.08 0.06	90.0	0.01 0.04	0.04	0.03 0.21	0.30	0.04 0.09	0.09
Crit Moves:	* *							* * *		Crit Moves:						*		
Green/Cycle:	0.23 0.00		0.00 0.			00 0.28		0.41		Green/Cycle:	0.22	0.22	0.11 0.20	0.20	0.19 0.47	0.47	0.10 0.38	0.38
volume/cap:	0.89 0.00	0.49	0.00.0	0.00 0.00		TO . O . O .	0.07		00.00	Cap:	- 1	_		77.0				
Level Of Serv	Of Service Module:	. 4	6	0		0.0 16.8	35.6	26.6 3.1	. 0.0	Level Of Service Module Delav/Veh: 28.6 20.8	••	20.8	25.8 21.7	21.7	21.8 11.6	13.5	28.6 13.7	13.7
	1.00 1.00	1.00			1	1.00 1.00		1.00 1	Н	User DelAdj:				1.00		1.00		1.00
	38.3 0.0	6.4	0.0			16.	35	26.6 3.1	0.0	AdjDel/Veh:	28.6 20.8	20.8	25.8 21.7	21.7	21.8 11.6	13.5	28.6 13.7	13.7
Queue: 12 0 8 0 0 + + + + + + + + + + + + + + + +	12 0	80 *	0	0 0	0	0 0 13	13	19	0 ****	Onene:		**** ***	******* O	T ****	7 T	21	7 6	* c * * *
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D-AM.CMD	T	Tue Nov 5, 1996 13:07:19	13:07:1	ø.		Page 1	14-1	D-AM.CMD		Tue Nov	Jov 5, 1996	13:07:1	19		Page	15-1
1 1 1 1 1 1 1 1 1 1 1	FISC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	2000 EIS r Fill Al	S/EIR ternativ	O					ISCO/Po Redi	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern AM Peak Hour	2000 EL Fill A	SIS/EIR Alternative	av		 1 1 1 1
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	nputation uture Vol	Report lume Alte	rnative	i # :	* * ·	**************************************	level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of S perations ********	Level Of Service Computation Report Operations Method (Future Volume Alt	ce Computation Rep od (Future Volume ************************************	ce Computation Report od (Future Volume Alternative) ************************************	rnative ******	* * * * * * * * * * * * * * * * * * * *	****
<pre>cycle (sec): Loss Time (sec): Optimal Cycle:</pre>	**************************************		**************************************	ol./Cap. lay (sec/ rvice:	(X): veh):	*	* * * @ m U	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 11 11 71	(Y+R =	Critical Average Level	tical V rage De el Of S	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): veh):	0.395 17.6 C	17.6 C
**************************************	**************************************	South Bound	nd R L	East Bound	ınd R I	West	Bound	Approach: Movement:	2 1	<u>-</u>	South Bound L - T -	=	East Bound	=	West Bound	ound - R
Control:	 Protected Ov1	 		Split Phase	-	Split Phase	ase de	Control: Rights:	 Protected Include	<u>-</u>	Protected Include	- -	Split Phase Include		Split Phase Include	hase
Min. Green: Lanes:	10 20 20	100	20	10	20	10 20 1 0 0	20	Min. Green: Lanes:	0 20	20	0 20	20	10 20	0 50	10 20 1 0 1	1 0
Volume Module	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	_		<u>-</u>	;	-	Volume Module			1	<u> </u>	1	<u>-</u>	:	:
Base Vol: Growth Adj:	0 0 0 1.00 1.00 1.00	72 109 1.00 1.00	165 256 1.00 1.00	1.00	1.00 1.	0 169	364 1.00	Base Vol: Growth Adj:	1,00	٦	1.00 1		1.00		Η.	Н
Initial Bse:		72 109 0 209	165 256 0 0	56 51	270	0 169	364 0	Initial Bse: Added Vol:	0 175 0 0	45	0 154 0 0	31 0	24 43 0 0	13	205 31 198 0	115
PasserByVol:	0	0 (0 0	0 ,	PasserByVol:	0 0	0 2 2	0 0	٥ ر	0 0	٥٤	0 0	0 21.0
Initial Fut: User Adj:	153	1.00 1.00		1.00	-	1.00 1.00	0.50	User Adj:	1.00	7	1.00		1.00			
PHF Adj:		1.00 1.00	• •	256 51	1.00 1	1.00 1.00	1.00	PHF Adj: PHF Volume:	1.00 1.00	1.00 1 315	.00 1.00 1 0 154	1.00 1. 31	1.00 1.00 : 24 43	1.00 1	1.00 1.00 403 31	1.00
Reduct Vol:	0	. 0				0	0	Reduct Vol:	0	0 !						0 !
Reduced Vol: PCE Adj:	198 153 442 1.00 1.00 1.00	72 318 1.00 1.00		51 1.00		570 169 00 1.00	182 1.00	Reduced VOI: PCE Adj:	1.00		1.00		1.00			
MLF Adj: Final Vol.:		1.00 1.05		1.10		1.00 1.05 570 177	1.05 191	MLF Adj: Final Vol.:	1.00 1.10 0 193	1.10 1 346	.00 1.05 1 0 162	1.05 1. 33	1.05 1.05 25 45	1.05 1 14	1.00 1.00 403 31	115
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				-						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1		1 1 1 1 1	
Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 0.95 1.00		1900 1900 0.95 0.95		1900			1900	rion ne: ment:			1900		1900	1900 1	1900 1900	1900
Lanes: Final Sat.:	1.00 1.00 1.00 1805 1900 1615	1.00 1.32	0.68 1.67 1234 2890	67 0.33 90 574	1.00 1	1.00 0.96 1805 1682	1.04 1815	Lanes: Final Sat.:	0.00 1.07	1.93 U 3293	0 3062	624 10	1086 1955	_	1805 1900	
Capacity Anal	Capacity Analysis Module: Vol/Sat: 0.11 0.08 0.27	0.04 0.14	0.14 0.1	0.10 0.10	0.17 0	32 0.11	0.11	Capacity Analysis Vol/Sat: 0.00 Crit Moves:	Module 0.11	.11	0.00 0.05 0	0.05 0.	0.02 0.02	0.02 0	0.22 0.02	0.07
Green/Cycle: Volume/Cap:	-	0.10 0.20	0.20 0.20 0.70 0.49	20 0.20 49 0.49	0.20 0	0.36 0.36	0.36	Green/Cycle: Volume/Cap:	0.00 0.22	0.22 0	0.00 0.22 0	0.22 0.0.24 0.	0.20 0.20 0.12 0.12	0.20 0.00	0.47 0.47 0.47 0.48 0.03	0.47
Level Of Service Module: Delay/veh: 50.0 21.2		28.0 26.2	26.2 23.	23.1 23.1	31.9 2	29.5 15.0	15.0	Level Of Ser Delay/Veh: User DelAdi:	Level Of Service Module: Delay/Veh: 0.0 22.2 User DelAdi: 1.00 1.00	22.2 1.00 1	0.0 20.7 2	20.7 21	21.2 21.2 1.00	21.2	12.0 9.3 1.00 1.00	3 9.8 0 1.00
AdjDel/Veh: Queue:		28.0 26.2						AdjDel/Veh: Queue:	22.2		20.7		21.2		9.	
****	****	*******	****	****	*****	*****	***	****	****	* * * * *	***	* * * * * *	****	* * * * * *	***	****

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D-AM.CMD	Tue Nov 5, 1996 13:07:1	3:07:19	Page 16-1	D-AM.CMD	2	Tue Nov 5, 1996 13	13:07:19	Page 17-1
IL	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	00 EIS/EIR ill Alternative r			FISCO	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	0 EIS/EIR 11 Alternative	
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternati ************************************	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	Computation Report (Future Volume Alternativ ************************************	tive)	1994 ***********************************	Level C 1994 HCM Operatio ************************************	Level Of Service Computation Report Operations Method (Future Volume Alt ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #16 7th St./ I-880 SB Ramps	* * * * * * * * * * * * * * * * * * *
Cycle (sec): 100 Loss Time (sec): 10 (Y+R Optimal Cycle: 70	Criti R = 4 sec) Avera	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:		Cycle (sec): Loss Time (sec): Optimal Cycle:	100 ec): 5 (Y+R e: 35	Critical Vol./ = 4 sec) Average Delay Level Of Servi	Critical Vol./Cap. (X): Average Delay (sec/veh): Level Of Service:	0.414 1.4 A
Approach: North Bound Movement: L - T - R	*	South Bound East Bound L - T - R L - T - R	West Bound L - T - R	Approach: Movement:	North Bound L - T - R	South Bound L - T - R	South Bound East Bound L - T - R L - T - R	West Bound L - T - R
1: Protected : Include reen: 10 20	Protected Ov1	Protected Include 20	Protected Include	Control: Rights: Min. Green:	Protect Inclu	Protected Include	Protected Include 0 20 20	Protected Include 20
Lanes: 2 0 0 1		O Z O T		Lones:			7	7
	21 17 0 9	94 0 16	0 0 62 1	Volume Module: Base Vol:	0	0	0	65 0 0
Growth Adj: 1.00 1.00 1.00 Initial Bse: 0 548 21	00 1.00 1.00 1.00 21 17 0 94	0 1.00 1.00 1.00 4 0 16 0	0 1.00 1.00 1.00 0 0 62 1	Growth Adj: Initial Bse:	1.00 1.00 1.00	1.00 1.0	1.00 1.00 1	1.00 1.00 1.00 65 0 0
Added Vol: 697 0	0 0 0 365	5 314 4 0 0 0	0 0 0 0	Added Vol: PasserByVol:	0 0	00	0 318 605 0 0 0	0 1081 0 0 0 0
ut: 697 548	17 0	314 20	0 81	Initial Fut:	0	0	0 318	1081
User Adj: 1.00 1.00 1.00 PHF Adj: 1.00 1.00	00 1.00 1.00 1.00 00 1.00 1.00 1.00	0 1.00 1.00 1.00 0 1.00 1.00 1.00	0 1.00 1.00 1.00 0 1.00 1.00 1.00	User Adj: PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00
548	21 17 0 459	9 314 20	0 0 81 1	PHF Volume: Reduct Vol:	0 0	00	0 318 605	65 1081 0 0 0 0
: 697 548	17 0	314 20	0 81	Reduced Vol:			0 318	1081
1.00 1.00 1.	1.00 1.00 1	1.00 1.	1.00 1.	PCE Adj: MLF Adj:	1.00 1.0	1.00 1.0	1.00 1.00 1	1.00 1.0
8 548	21 17 0 518	8 314 21	0 0 85 1	Final Vol.:	0 0 0	0 0 0	0 334 605	67 1135 0
Saturation Flow Module: Sat/Lane: 1900 1900 1900		0061 0061 0061 0	0 1900 1900 1900	Saturation F Sat/Lane:	dule: 1900	1900	1900 1900	
Adjustment: 0.95 0.99 0.99	99 0.95 1.00 0.85 04 1.00 0.00 2.00	5 0.95 1.00 1.00 0 1.00 2.00 0.00	0 1.00 1.00 1.00 0 0.00 1.98 0.02	Adjustment: Lanes:	1.00 1.00 1.00 0.00 0.00	1.00 1.00 1.00 0.00 0.00	1.00 1.00 0.85 0.00 2.00 1.00	0.95 1.00 1.00 2.00 2.00 0.00
Sat.: 3610 1812	1805 0	1805 3800	0 3756	Final Sat.:	0	0 0 0	0 3800 1615	3610 3800 0
alysis	_	_	00.0	Capacity Analysis Vol/Sat: 0.00	lysis Module: 0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.09	0.02 0.30 0.00
Crit Moves: **** Green/Cycle: 0.28 0.38 Volume/Cap: 0.71 0.79 0.79	**** 38 0.10 0.00 0.42 79 0.09 0.00 0.38	2 0.22 0.42 0.00 8 0.79 0.01 0.00	0 0.00 0.20 0.20 0 0.00 0.11 0.11	<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.85	0.10 0.95 0.00 0.19 0.31 0.00
Level Of Service Module:			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Level Of Service Module	 vice Module:		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
22.5 22.0	26.4 0.0	1 31.2 11.0 0.0	0.0 21.2	Delay/Veh:	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.8 1.3	26.7 0.1 0.0
User DelAd]: 1:00 1:00 1:00 AdjDel/Veh: 22.5 22.0 22.0	.0 26.4 0.0 13.1	31.2 11.0	0.0	AdjDel/Veh:		0.0	0.0 0.8	0.1
Queue: 18 15	1 0 0 10	0 6 0	0 0 2 0	Onene:	0 0 0	0 0 0	0 2 4	2 2 0
***************************************	***************************************	***************************************				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	: : : : : : : : : : : : : : : : : : :	: : : : : : : : : : : : : : : : : : :

Property Property	FISCO/Port V			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
1991	Reduced AM 1	'ision 2000 EIS/EIR Harbor Fill Alternative Peak Hour			FISCC	/Port Vision 200 educed Harbor Fi AM Peak Hour	00 EIS/EIR 111 Alternative	
Control Cont	Level Of Servi. 1994 HCM Unsignalized Metl ************************************	ce Computation Report hod (Future Volume Alternativ ************************************	***************************************	Intersection	Level (994 HCM Operatic ************************************)f Service Comput mns Method (Futur // I-880 Frontage	ation Report e Volume Alternal ***********************************	* * * * * * * * * * * * * * * * * * *
National State Sta	**************************************	Worst Case Level Of S	ervice: C	Cycle (sec):	100	Critic	tal Vol./Cap. (X)	
	Approach: North Bound Soutl	h Bound East Bound	West Bound	Optimal Cycle	· • •		of Service:	:
The Charles The Charles	л - Т - л 	- R L - T - R -	F .	**************************************	**************************************	South Bound		West Bound
	Uncontrolled		Stop Sign	Movement:	- L		T .	- !
	0 0 1 1 0 1 0	2 0 0 0 0 0 0	0 0 0	Control:	Split Phase	Split Phase	Protected	Protected
1.00 1.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			include 20	include 20	inciude 10 20	10 20
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	68 0 0	0 0 0 0	0		0 1 1	1 0 1	1 0 1 1	1 0 1
1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.	Modul		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	0 314 0	0000	0	Base Vol:	0	48	65 234	0 152
1.00 1.00	1: 0 0 0 0	0 0 0	0		1.00	1.00	1.00 1.00	1.00 1.00
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1.00	XXXX XXXX	XXXX XXXX		PCE Adj:	1.00	1.00	1.00 1.00	1.00 1.00
Saturation Flow Module:	1.10 1.00 1.00	1.10 1.10 1.10		MLF Adj:	1.05	1.00	1.00 1.05	173 256
Saturation Flow Module: 1900 1900 1900 1900 1900 1900 1900 19	XXXX XXXX	XXXX		rillar vor:	0/1	1 7 7	715 69	
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 190	0 314 R9	0 0	0	Saturation F1	ow Module:	_	=	<u>-</u>
2.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx				Sat/Lane:		1900 1900	1900 1900	1900 1900
		XXXX XXXX XXXXX XXXX	4 xxxx		0.93	0.95 1.00	0.95 0.99	0.95 0.90
		XXXX XXXXX XXXXX	.0 xxxx 5.		1.03	2.00 0.98	1.00 1.92	1.00 1.02
403 XXXX XXXXX XXXX XXXX XXXX XXXX XXXX	1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Final Sat.:	1821	1854	1805 3612	1805 1751
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Level Of Service Module: ** * * * * * * * * * * A	<u>-</u>		-					
LT - LTR - RT			1 xxxx	Level Of Serv	rice Module:	-	-	-
LT - LTR - RT LT - LTR - RT LT - LTR - RT User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	*	*	*	Delay/Veh:	23.2	16.3	27.7 20.9	42.1 21.7
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Table J.7-10

D-PM.CMD	Tue Nov 5, 1996	10:5	0:38 EIS/EIR	1		Page 1-	-1 D- -1 D- D-	PM. CMD	Tue Nov 5, 1996 10:50:38	50:38	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Page 1-2
	`	Harbor Fill Peak Hour	Alternat	ive	1 1 4 3 1	 	!	FISCO/E Red	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	EIS/EIR	ative	
	Trip Generation Report	tion Repo	ort.					90	1	Rate	S	Total
	Forecast for PM Peak Hour	PM Peak	Hour					# Subzone Amount Units	uI	Out	In Out	Trips Total
Zone # Subzone	Amount Units	Rate	Rate	Trips Tri In Out	gd.	Total % Trips T	% Of Total	Zone 28 Subtotal	1		. 264 316	580 10.3
1 New Harbor Zone 1	1088.00 Employees Subtotal	90.06	0.22	65 65	239	304	5.4	TOTAL			2325 3326	5651 100.0
3 J.I.T. Zone 3	343.00 Employees Subtotal	0.10	0.36	34 34	123 123	157	2 .8					
6 Middle Harbr Zone 6	r 516.00 Employees Subtotal	90.0	0.22	31 31	114	145 145	2.6					
7 7th St Harbr Zone 7 3	r 613.00 Employees Subtotal	90.0	0.22	37	135	172	3.0					
8 Outer Harbor Zone 8	Harbor 706.00 Employees Zone 8 Subtotal	90.0	0.21	4 4 2 2	148	190	3. £					
10 New Park Zone 10	ark 1.00 Total Trips Zone 10 Subtotal	55.00	96.00	55	96 96	151	2.7					
11 New Harbor Zone 11	1.00 Trucks Inter 1 Subtotal	229.00	274.00	229	274	503	8 8 6 6.					
16 Middle Harbr Zone 16	r 1.00 Trucks Inter 6 Subtotal	109.00 130.00	130.00	109	130	239	4 4 2. 2					
17 7th St Harbr Zone 17	r 1.00 Trucks Inter 7 Subtotal	129.00	155.00	129	155	284	s.0 0.0					
18 Outer Harbor Zone 18	Harbor 1.00 Trucks Inter Zone 18 Subtotal	148.00	178.00	148	178 178	326 326	s.8 8.					
21 New Harbor Zone 21	1.00 Truck External 407.00 488.00 1 Subtotal	11 407.00	488.00	407	488 488	895 895	15.8 15.8					
23 J.I.T. Zone 23	1.00 Truck External 3 Subtotal	1353.00	423.00	353	423	776 776	13.7 13.7					
26 Middle Harbr Zone 26	r 1.00 Truck External 19 6 Subtotal	1193.00	232.00	193 193	232	425	7.5					
27 7th St Harbr Zone 27	r 1.00 Truck External 7 Subtotal	1 229.00	275.00	229	275 275	504	e. 8 e. 9					
28 Outer Harbor	r 1.00 Truck External 264.00 316.00	ון 264.00	316.00	264	316	580	10.3					
Traffix 6.8.03	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	oc. Licer	ised to I	owling	Assoc.	, Oakla	'nď	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	vling Assoc. Lic	ensed to	Dowling Ass	oc., Oaklan

D-PM.CMD

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	1 	! ! !	Westbound	rhru R		0	0	0		0	0 (>		0	0	0			0 :	281	ç	0 7	504		39	0 6		o	446	446		٥	4	4		624	0	624
	ψ		ğ	Left		0	0	0		92	0 (7,7		0	0	0			0 0	0	Š	# C	94		80	o တို့	1	o	289	289		0	412	412		0	51	51
	CO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour		τ.			20	0	20		0	387	r r		74	823	897		,	0 0	0		121	131		13	3 0		c	15	15		٥	289	289		210	249	459
50:38	EIS/E	port	r Rasthound	Thru R		0	0 (0		0	0 0	>		0	0	0		•	0 777	423		613	848		14	0 4	i I	c	646	646		c	15	15		454	0	454
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5, 199	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern PM Peak Hour	Turning Movement Report	4 P			0	06	0		0	99	0		75	226	301		,	0 6	453	c		0		15) 13		0	0	0		0	0	0	1-880 Ramps	23	0	23
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0	 	! ! !	Nor	Left Thru Right			0 1				298				168	804			0 0	00	u	n <	95	ne St		o 9	ָרָ פָּינָי פַּינִי	0	4	4	Harbo	0	383	383			439	439
D-PM.CMD	• • • • •		Volume		#3 Maritime	Base	Added	Total	#4 Maritime	Base	Added	נמד	#5 Maritime	Base	Added	Total		름	Base	Total	#7	בסקים קייקים איקים	Total	#8 Adeline St./	Base	Added Total	#0 7th /Widdle Unahov DA	Base	Added	Total	#10 New Harbor/Mid	Base	Added	Total	#10 Maritime	Base	Added	Total
۵	i 1		Ϋ́	Ţ.	#3	Ba	Ad	0.7	#4	Ва	Ad	2	#2	Ba	Ad	Тo		# (מא	T P	# 4	מ מ	Ę Ę	#	Ba	A P	. d	r e	Ā	T.	#	Ba	Ad	J.	#	Ba	Ad	To
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Page 2																																						
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	EIS/EIR Alternative			15	:	;	30.0	30.0	30.0	30.0	0.0	0.0	0.0	0.0	32.0	32.0	32.0	32.0	32.0																			
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6 10:50		stribution Repor	Trips Ex:	13			23.0	23.0	23.0	23.0	0.0	0.0	0.0	0.0	9.0	9.0	0.0	0.0	y																			
5, 1996	t Vision 200 ed Harbor Fi PM Peak Hour	tribut	Of Tri	Gates 12			17.0	17.0	17.0	17.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	20.0	20.02																			
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This part This	D-PM, CMD	Tue Nov	2,	1996 10:50:38	50:38		1 1 1 1 1	Page	ge 3-2	. !	D-PM.CMD	0	1	1	Tue Nov	Nov 5,	1996	1996 10:50:38	38			Page	3-3	;
The proper interpretate interpretation of the properties interpretation of the propert		FISCO/Po	rt Vision ced Harbo PM Peak	n 2000 or Fill Hour	EIS/E l Alte	IR rnative	a)							ĬĽ.	ISCO/P Red	ort Vi uced H PM P	sion 2 arbor eak Ho	000 EI Fill A ur	S/EIR lternat	cive	1	! ! ! !	 	!
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D-PM.CMD				Tue	Tue Nov 5, 1996 10:50:38	, 1996	10:50	0:38			Pag	Page 3-4		D-PM.CMD	۵			Tue 1	lov 5,	1996	Tue Nov 5, 1996 10:50:38		1	1	Page 3	3-5
, ; ; ; ; ;	: 	1 1 1 1	1 1 1 1	FISCO/ Re	6 5	rt Vision 2000 sed Harbor Fil	2000 1 Fill	EIS/EII Alter	ative				}				_	FISCO/Port Reduced	ort Vis	t Vision 200 ed Harbor Fi PM Peak Hour	FISCO/Port Vision 2000 BIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	EIR	v ve	 		
Volume Type L	Nor Reft T	Northbound Left Thru Right	;	Sout Left Th	Southbound Left Thru Right		East eft T	Eastbound Left Thru Right	;	Westbound Total	oound ru Righ	Tc It Vol	Total Tolume	Volume	Northbound Left Thru Right	Northbound It Thru Rig		Southbound Left Thru Right	Southbound t Thru Righ		Eastbound Left Thru Right	ınd Right	We Left	Westbound Total Left Thru Right Volume	d ight V	Total 7olume
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Total	0	0 0	0		115	0	0	. 0	0	0	. 0		154	Total	0	0	0	0	0 -302		-226 -44	0	0	-37	0	609-
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#	S	Maritime St./ 7th St. Extensio	α	5.8 0.	0.080 B	14.0	0.695	+ 8.229 D/V
#	9	7th St./ 7th St. Extension	υ	20.9 0.	0.000 B	14.7	0.670	-6.129 D/V
#	00	Adeline St./ 3rd St.	υ	20.4 0.	0.084 F	72.1	0.668	+51.744 D/V
#	σ	7th/Middle Harbor Rd	υ	15.8 0.	0.000 C	17.2	0.630	+ 1.404 D/V
#	10	New Harbor/Mid Harbor Rd		0.00	0.000 C	16.3	0.673	+16.281 D/V
#	12	Maritime St./ W.Grand Ave./ I-	В	12.4 0.	0.237 C	18.8	0.410	+ 6.398 D/V
#	13	Adeline St./ 5th St./ I-880 SB	υ	17.6 0.	0.328 D	30.8	0.510	+13.115 D/V
#	14	Union St./ 5th St./ I-880 Nort	щ	12.5 0.	0.178 C	16.8	0.227	+ 4.359 D/V
#	15	7th St./ I-880 NB Ramps / Fron	m	11.5 0.	0.135 C	18.7	0.426	+ 7.286 D/V
#	16	7th St./ I-880 SB Ramps	Ø	2.6 0.	0.113 B	5.6	0.550	+ 3.004 D/V
#	17	14th St./ I-880 Frontage Rd.	Ø	1.9 0.	0.000 C	2.3	0.00.0	+ 0.000 V/C
#	18	W.Grand Ave./ I-880 Frontage R	υ	21.1 0.	0.505 C	22.8	0.658	+ 1.696 D/V

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## HCM Operations Method (Future Volume Alternative) ## Maritime St./ Burma St. 100	******* ******* ******* ******* ****	* HCM * * * * * * * * * * * * * * * * * * *	ı į *	. * * * *	1
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D-PM.CMD		Tue	Tue Nov 5, 1996 10:50:39	996 10:	:50:39			ã	Page 8-1	F	D-PM.CMD		H	Tue Nov	5, 1996	5 10:50:39	: 39		Pa	Page 9-1	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 5 6 6 6 6	FISCO/	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	on 200(bor Fi] k Hour	0 EIS/1	EIR	je Je						FISC	J/Port Reduced	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern PM Peak Hour	2000 E Fill Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	ive			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternati ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternativ ************************************	evel Of eration ******	Level Of Service Computation Report perations Method (Future Volume Alt	Computa (Future ******	ation 1 e Volum ******	Report	ernativ	* * * * * * * * * * * * * * * * * * *	* *	i ** i ** i **	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	1994 HCM (************************************	Level Of Service Operations Method ***********************************	Of Servons Met	rrvice Com lethod (Fu ********	nputati iture V	Of Service Computation Report ons Method (Future Volume Alternative)	t ternati *****	*	* * * * * * * * * * * * * * * * * * *	* *
######################################	ec): 8	**************************************	.*************************************	**************************************	****** al Vol e Dela;	****** ./Cap. y (sec, vice:	(x): /veh):	*	0.695 14.0 B	*	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh) Optimal Cycle: 58	ac): 58 (Y	100 8 (Y+R 58	* 4.	Critical A sec) Average Level Of	Critical Vol./ Average Delay Level Of Servi	Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	Cap. (X): (sec/veh): ce:	0	0.670 14.7 B	
**************************************	*********** North Bound L - T -	****** nund - R	South Bound	****** ound - R	. H	East Bound	and R	West	West Bound	* E	Approach: Movement:	North Bound L - T -	Bound - R	Sou	South Bound		East Bound	ound - R	West	West Bound	
Control: Rights:	i or ii.	;	Protected Ovl	ted	<u>-</u>	Protected Ovl		Prof	Protected Include	- c	Control: Rights:	Protected Include	otected Include		Protected Include		Protected Include	ted ude	Prote	Protected Ovl	- 02
Lanes:	2 0 2	0	0 0 7	0 1	7 2 5	0	0 1	0	0 !	0	Lanes:	0	0	2 0	0	<u>-</u> : - :		0	. !	-	
Volume Module	e:		c	ر ب	223	c	47	· -	c	- -	Volume Module Base Vol:	- 6)	0	- 31	0		0			0	
Base vol: Growth Adj: Tritial Bse:	1.0	1.00	1.0	1.00		1.0	1.00			1.00	Growth Adj: Initial Bse:	1.00 1.00	1.0	i.	1.00		1.0	1.0	1.00 1.00	1.0	00
Added Vol:	32	00	0 304	226		00	823	0 0	00	0 0	Added Vol:	00	0 0	674	00	453	606 423 0 0	00	0 0	281 489 0 0	68 0
Initial Fut:	804 327		0 304			0 0	897	0 0		0 ;	Initial Fut:									281 489	68 6
User Adj: PHF Adj:	1.00 1.00	1.00	1.00 1.00			1.00 1.00	1.00		00.	1.00 1.00	User Adj: PHF Adj:	1.0	1.0					7.0			20
PHF Volume:	804 327	00	0 304	301	452	00	897	00	00	00	PHF Volume: Reduct Vol:	00	00	705	00	4 53	606 423 0 0		0 0	281 489 0 0	, O
Reduced Vol:	804 327	0 0	0 304			0 9	897	0 6		0 (Reduced Vol:	0 0				453	606 423	0 5	0 0	281 489	6 6
PCE Adj: MLF Adj:		1.00				1.00 1.00 1.03 1.00	1.00			1.00	MLF Adj:	1.0	. 6								201
Final Vol.:	828 343	0	0 319	301	466	٥	897	0	0	0 -	Final Vol.:	0	0 0	726	0	453	624 444	0	0 3	310 537	
Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 0.95 1.00 Lanes: 2.00 2.00 Final Sat.: 3610 3800	low Module: 1900 1900 0.95 1.00 2.00 2.00	1900	1900 1900 1.00 1.00 0.00 2.00 0 3800	1900 0.85 1.00	_ =	1900 1900 0.95 1.00 2.00 0.00 3610 0	1900 0.85 1.00 1615	1900 1.00 1.00 0.00 0.00 0	1900 1 1.00 1 0.00 0	1900	Saturation Flow Module Sat/Lane: 1900 1900 Adjustment: 1.00 1.00 Lanes: 0.00 0.00 Final Sat.:	low Module 1900 1900 1.00 1.00 0.00 0.00	e: 0 1900 0 1.00 0 0.00	1900 0.95 2.00 3610	1900	1900 1 0.85 (1.00 2 1615 3	1900 1900 0.95 1.00 2.00 2.00 3610 3800	1900	1900 1900 1.00 0.91 0.00 1.10 0 1898	00 1900 91 0.91 10 1.90 98 3289	. 000
Capacity Analysis Module: Vol/Sat: 0.23 0.09 0 Crit Moves: *** Green/Cycle: 0.30 0.50 0 Volume/Cap: 0.77 0.18 0	1ysis Modul 0.23 0.09 **** 0.30 0.50	0.00	0.00 0.08 **** 0.00 0.20	0.19	_	0.13 0.00 0.42 0.00 0.31 0.00	0.56 **** 0.72	0.00.0	. 0 00.0	- 0000	Capacity Analysis Vol/Sat: 0.00 Crit Moves: Green/Cycle: 0.00 Volume/Cap: 0.00	lysis Module 0.00 0.00 0.00 0.00	ule: 0 0.00 0 0.00 0 0.00	0.20	00.00	0.28 **** 0.42 0.67	0.17 0.12 **** 0.26 0.50 0.67 0.23	0 0 0 0	0.00 0.16 **** 0.00 0.24 0.00 0.67	0.16 0.16 **** 0.24 0.66 0.67 0.25	16 . 66 .
Level Of Service Module: Delay/Veh: 23.2 9.0 0.0 0.0 22.8 User DelAdj: 1.00 1.00 1.00 1.00 1.00 AdjDel/Veh: 23.2 9.0 0.0 0.0 22.8 Queue: 22 5 0 0 8	 vice Module 23.2 9.0 1.00 1.00 23.2 9.0 22 5	0.0	0.0 22.8 1.00 1.00 0.0 22.8 0 8	+ +	12.4	5.7 12.4 0.0 8.0 1.00 1.00 1.00 1.00 5.7 12.4 0.0 8.0 4 9 0 17	8.0 1.00 1.00 1.7	0.0 1.00 1 0.0 0.0	0.0	1.00 0.0 0.0 0.0 0.0	Level Of Service Module Delay/Veh: 0.0 0.0 0.0 User DelAdj: 1.00 1.00 AdjDel/Veh: 0.0 0.0 Queue: 0 0	vice Module 0.0 0.0 1.00 1.00 0.0 0.0 0.0 0.0	le: 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	13.9 1.00 13.9 13.9	0.0	17.0 1.00 17.0 17.0 11.	22.8 9.1 1.00 1.00 22.8 9.1 16 7	1.00	0.0 23.1 1.00 1.00 0.0 23.3	:	4.4.4

Reduced Harbor Fill Alternative PM Peak Hour Level Of Service Computation Report Level Of Service Computation Report Level Of Service Computation Report ***********************************	Reduced Harbor Fill Alternative	Don 2000 E bor Fill k Hour Computati (Future V ***********************************	on 2000 EIS/EIR bor Fill Alternative k Hour Computation Report (Future Volume Alternative) ***********************************	ive		1 6 1 1 1		1 1 1 1 1 1	FISCO/	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern PM Peak Hour	t Vision 2000 ed Harbor Fill PM Peak Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	P		
1994 HCM Opera 1994 HCM Opera 1994 HCM Opera 1994 HCM Opera 1994 HCM Opera 1994 HCM Opera 1994 HCM Opera 1994 HCM Opera 1995	1 Of Service (C 1 tons Method (E ************************************	mputati wture v ****** citical rerage I rerage I **** of	Con Repor Jolume Al ******** Vol./Ca; Delay (st Service	r.										1 1 1 1	
	R	rerage Ir svel of svel	Vol./Car Delay (st Service	lternat	[ve]	* *	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Level Of Service 1994 HCM Operations Method ************************************	Level Of peration: *******	Service ns Method	Computal (Future	Service Computation Report Method (Future Volume Alternative) ***********************************	ernative)) ***********************************	* * *
	South Bou R L	nd . R .		p. (X): sc/veh)			Cycle (sec): Loss Time (sec): Optimal Cycle:	100 c): 8 (Y+	0 8 (Y+R =	= 4 sec)	Critical Average Level Of	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	(X): 'veh):	0.630 17.2 C	0.630 17.2 C
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 0 0 22 0 0 1.		********* East Bound L - T -	Bound R	West Bound L - T - R	nd . R	Approach: Movement:	North Bound L - T -	ound - R	South Bound	Sound R	East Bound	ind R	West Bound L - T -	sound - R
	10 20 0 1 0 1 00 1 00 1 00 1 00 43 0 640	le	Split Phase Include	it Phase Include	Split Phase Include	3.Se le	Control: Rights:	Protected Include	red ide	Protected Include	ted	Protected Include	le d	H G	
Min. Green: 10 20 Lanes: 0 1 0 1	43 1.00 1 43	20 1	10 20 0 1 0	1 0	10 20	1 0 .	Min. Green: Lanes:	10 0	0 10	000	00	0 20	0 7 7	10 20 1 0 1	0 1
Volume Module:	43 1.00 1 43		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1	Volume Module:	; ; ; ; ; ; ;	- ! ! !		-		-		
36 0	4 6 0	15	30 14	4 13	1.00 1.00	78	Base Vol: Growth Adi:	0 0	1.00	1.00 1.00	1.00	0 0	1.00	0 0	1.00
e: 36 0	0		30 14		E 68	78						0 0	0 7	0 0	40
Added Vol: 0 979 PasserBvVol: 0 0	0 0	0 0	50	000		. 0	Added Vol: PasserByVol:	, o					0		
at: 36 979	43				89	78	Initial Fut:	1				0 646	155	289 446	H 6
User Adj: 1.00 1.00 1.	1.00 1.00 1.00	1.00	1.00 1.00	0 1.00	1.00 1.00	1.00	User Adj: PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00		1.00 1.00	
1.00 1.00 ne: 36 979	43		1		68	78						0 646	15	289 446	9 0
Reduct Vol: 0 0 0	122 43 640	ס זי	30 14	0 0 4	0 0	78	Reduced Vol:	. 4	383		00	64			о н
1.00 1.00	1.001		H		1.00 1	1.00				-					
1.05 1.05	1.05 1		i.	0 1.00	1.00 1.00	1.00	MLF Adj: Final Vol :	1.00 1.00	383	1.00 1.00	0 1.00	1.00 1.05	1.05	1.00 1.05 289 468	1.05
Final Vol.: 38 1028	128 45 672	16	30 1	14 13	88	18	Final vol.:	;	:	-	1	- ;		- ;	
odule:	=				-	-	Saturation Flow Module	ow Module				000	0	0001	000
1900 1900	1900				1900	1900	Sat/Lane:	1900 1900	ט אַ כּ	1900 1900					
Adjustment: 0.98 0.98 0	0.98 1.00 1.00	0.1	1 00 0 52	0.93	0.85 0.39	0.30		1.00 0.00		0.00 0.00		0.00 1.95			
Sat.: 119 3206	233		1805 916		1512	1325	Final Sat.:	1805 0			0	0 3712	_	1805 3792	2
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		! ! ! ! ! !	Capacity Analysis	vsis Modul]e:	1	-	-	-		
Vol/Sat: 0.32 0.32 0	0.32 0.19 0.19	0.19	0.02 0.02	0.02	0.06 0.06	90.0	Vol/Sat:	0.00 00.00		0.00 0.00	00.00	0.00 0.18	0.18	0.16 0.12	2 0.12
es: ***							Crit Moves:								
: 0.28 0.28	0.28 0.20 0.20	0.20	0.20 0.20	0.20	0.20 0.20	0.20	Green/Cycle: Volume/Cap:	0.01 0.00	0.63	0.00 0.00	0.00	0.00 0.63	0.63	0.63 0.23	3 0.23
1.10				- :		<u> </u>		1 1 1 1			;	1 1 1 1 1 1 1]		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Level Of Service Module:	 7 43 F 43 F	4 4 7	0.12.0.16	0 21.0	22.0 22.0	22.0	Level Of Service Module: Delay/Veh: 12.6 0.0	rice Module 12.6 0.0	.e: 18.0	0.0 0.0	0.0	0.0 20.8	20.8	23.4 7.7	7.7
User DelAdi: 1.00 1.00 1					1.00	1.00	User DelAdj:			7	7	1.00 1.00		-	-
-	43.5			.0 21.0	22.0 22.0	22.0	AdjDel/Veh:	12.6 0.0	18.0	0.0 0.0	0.0	0.0 20.8	20.8	23.4 7.7	7.7 7
Queue: 4 56 9 3 23 1 1 0	9 3 23	·	1	0	7 7 T	7 ;	Queue:	*****	*****	*****	*****	******	*****	******	*****

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D-PM.CMD	T	Tue Nov 5, 1996 10:50:39	10:50:39		Page 12	2-1	D-PM.CMD		Tue Nov	Nov 5, 1996	10:50:39	.39		Page	13-1	
6 6 1 1 1 1 1 1 1 1 1 1 1	FISCC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	000 BIS/BIR Fill Alternati	ve					FISCO/F	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	2000 E: Fill /	IS/EIR Alternativ	Je Je			
19 ************************************	Level Of Service Cor 1994 HCM Operations Method (Fr ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Computation Report (Future Volume Alternative)	ernative	* * *	* *	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternat ************************************	Le Le HCM Ope: ************************************	Level Of perations *******	<pre>Level Of Service Computation Report Operations Method (Future Volume Alternat ************************************</pre>	putations Volume	Computation Report (Future Volume Alternative) ************************************	ernativ	* *	* + + + + + + + + + + + + + + + + + + +	* *
Cycle (sec): Loss Time (sec): Optimal Cycle:	**************************************	*	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	(X): /veh):	******* 0.67 16.	* * * * * ው ጥ ሀ	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 100 (Y+R	.00 10 (Y+R = 70	Critical Vol./Cap. (X) 4 sec) Average Delay (sec/veh Level Of Service:	tical Trage De	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): 'veh):	0.	0.410 18.8 C	
Approach: Movement:	North Bound L - T - R	South Bound East Bound L - T - R L - T - R	East Bound R L - T -	und - R	West Bound	and R	Approach: Movement:			South Bound L - T -	ld R	East Bound	und R	West I	Bound f - R	- -
Control:	rotected	Protected	Protected		Protected Include		Control: Rights:	Protected Include	- - - - - - - - - - - - - - - - - - -	Protected Include		Protected Include	d c l l	Protected Include		1 02
Min. Green: Lanes:	1 0 0 0 1	0	0 0		7 7 0		Lanes:		- -	0	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	0 1	- - -	0	-	
Volume Module:				= '] 		Volume Module		-		- 6	i i				- :
Base Vol: Growth Adj: 1	1.00 1.00 1.00	1.00 1.00 1.00	00 1.00 1.00	1.00	1.00 1.00	1.00	Base Vol: Growth Adj:	H.	1.00 1	1.00				7	7	00.
Initial Bse:	383 0 618	00	0 0 0	289	0 0 4	00	Initial Bse: Added Vol:	0 23 439 0	0 47	0 73	23	20 454 0 0	210	0 624 51 0		13
	0 0		0 (0 0		00	PasserByVol:	0 0	0 5	0 60	0 6	0 00	0 0	0 0		0 6
Initial Fut: User Adi: 1	383 0 618 1.00 1.00 1.00	1.00 1.00 1.00	00 1.00 1.00	1.00	1.00 1.00	1.00	User Adj:	1.00 1.00		1.00		1.00 1.00			Ή.	00
	1.00	1.00	1.00		1.00 1.00	1.00	PHF Adj:	1.00 1.00	1.00 1	1.00 1.00 1	1.00 1	1.00 1.00	1.00	1.00 1.00	1	.00
FHF VOLUME: Reduct Vol:	383 0 585		00	0 0	0 0	. 0	Reduct Vol:		. 0		0		0			0
	0	0			412	0 0	Reduced Vol:			23		20 454				13
PCE Adj: 1 MLF Adj: 1	1.00 1.00 1.00	1.00 1.00 1.00	00 1.00 1.00	1.00	1.00 1.00	1.00	PCE Adj: MLF Adj:	1.00 1.00	1.00	1.00 1.00 1	1.00.1	1.00 1.10	1.10	1.00 1.05	4 14	.05
1.:	0				412	0	Final Vol.:		74	23	_	20 499	505	51 655		14
Saturation Flow Module:	w Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Saturation Fl	Flow Module:	-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-		-	! ! ! !	; ;	-
Sat/Lane: 1		1900	1900		00	1900	Sat/Lane:	1900		1900						00
Adjustment: 0	0.95 1.00 0.85	1.00 1.00 1.00	00 1.00 1.00	0.85	0.95 1.00	1.00	Adjustment: Lanes:	0.95 0.89 2.00 0.24	0.89	1.00 0.50	0.50 1	1.00 1.49	1.51	0.95 I.00 I.00 1.96	00 1.00	0.0
Sat.:	0	0	0		0.5	0	Final Sat.:	401	_	884	_		2666	1805 372		08
Capacity Analysis Module:	sis Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-	-	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Capacity Analysis	Module	- :	 	_	•	_			-
Vol/Sat: 0	0.21 0.00 0.38 ****	0.00 0.00 0.0	0.00 0.00 0.01	0.18	0.23 0.00	0.00	Vol/Sat: Crit Moves:	0.13 0.06	90.0	0.00 0.03	0.03	0.01 0.19	0.19	0.03 0.18 ****	8 0.18	18
	0.32 0.00 0.65	0.00 0.00 0.00	00 0.00 0.27	0.27	0.34 0.60	0.00	Green/Cycle:	0.24 0.29	0.29	0.15 0.20 (0.03 0.13 (0.20 0	0.15 0.36	0.36	0.10 0.31	31 0.31	31
volume/cap: 0	:			=					_		_		_		- 1	-
Level Of Service Module: Delay/Veh: 21.4 0.0	ice Module: 21.4 0.0 6.9		-	-	٣	. 0.0	Level Of Serv Delay/Veh:	fodule: 17.2		21.2		23.4 16.5				۳.
User DelAdj: 1.00 1.00	.00 1.00 1.00	1.00 1.00 1.00	.00 1.00 1.00	1.00	1.00 1.00	1.00	User DelAdj:	1.00 1.00	17.2	1.00 1.00 1 23.7 21.2	1.00 1	1.00 1.00 23.4 16.5	1.00	1.00 1.00 27.2 19.3	3 19.3	00 °.
	10 0 10) . 11	. 0	Onene:			r rd 						0
*****	****	***	****	****	****	* * * * *	***	*****	***	*****	* * * *	***	* * * * * *	****	* * * * * *	* * *

Table J.7-10 (Continued)

D-PM.CMD		Tue Nov 5, 1996 10:50:39	996 10:5	98:09		Page	14-1	D-PM.CMD		Tue	Tue Nov 5, 1996		10:50:39		Page	15-1
	FIE	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	on 2000 bor Fill k Hour	EIS/EIR Alterna	tive				; ; ; ; ; ; ; ; ;	FISCO/Port Reduced	Port Vision 200 duced Harbor Fi PM Peak Hour	1 2000 or Fill Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	1 1 1 1 1 9	1 1 1 1 1 1 1	1 1 1 1 1
<pre>Level Of Service Computation Report ************************************</pre>	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Of Service Computation Report ions Method (Future Volume Alt ************************************	Computat (Future ******* I-880 SB	Tion Repo	rt 1ternat: *******	* *	* * * * * * * * * * * * * * * * * * *	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Le 1994 HCM Ope	Level Of Sperations	Level Of Service CC Operations Method (I ************************************	omputat future	e Computation Report od (Future Volume Alternative)	rnativ	***************************************	
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 82 Level Of Service:	100 : 12 (Y+:	12 (Y+R = 4 sec) Average Delay (sec/veh): 82 Level Of Service:	Critical Average Level Of	Critical Vol./Cap. Average Delay (sec/Level Of Service:	p. (X): ec/veh):		0.510 30.8 D	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 100 11 (Y+	000 11 (Y+R = 71	4 sec) An	Critical Vol./ Average Delay Level Of Servi	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): veh):	0.227 16.8	16.8 C
Approach: Movement:	North Bound L - T - R	South Bound L - T -	ound - R	East Bound	Bound - R	3	Sound - R	Approach: Movement:	Z	und R	South Bound L - T - R	ınd R	East Bound L T -	nd R	West Bound	ound - R
l: : reen:	Protected Ov1	01		Split Phase Include	it Phase Include	sp1	it Phase Include 20 20	Control: Rights: Min. Green:	otect Inclu	ed 20	Protect Inclu	1	Split In IO	se =	i ii ii	hase ude 20
	0 1 1 0		1 0	1 1 0	0 1		1 1	Lanes: 		1 1	0 0 1 1		0 1 0 1	0 !	1 0 1	1 0
Volume Module: Base Vol:	0 0 0 0	0 241 0	69	138 157	0 1	0 202	616	Volume Module Base Vol:	0 194	281	0.0			-	32 31	1
			69	138 157 0 0		355	→	Growin Adj: Initial Bse: Added Vol:	0 194	281 281	1.00 1.00 0 144 0 0		31 97	81 0	1.00 1.00 32 31 251 0	34
PasserByVol: Initial Fut: 2	0 0 0 0 251 194 534	0 0 0 0	0 69	0 0 138 157	0 0	355 202	0 0 2 616	PasserByVol: Initial Fut:	0 0	0 44	14	0 %	σ	0 6	,	۲,
	1.00	1.00	1.00			1.00 1	0 -	User Adj:	~ ~	1.00			1.00		4 -	4 -
me: ol:	194	241	69			355		PHF Volume: Reduct Vol:		442						
	251 194 534 1.00 1.00 1.00	4 241 124	1.00	138 157	7 161	355 20	308	Reduced Vol:	0 194		14		97		ω -	
:		1.00	1.05			1.00		Fire Adj: MLF Adj: Final Vol.:	1.00 1.00					1.05	1.00 1.00 2.83	1.00
Saturation Flow Module:	Ow Module:			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- ! ! !			On the property of the propert						=		-
Sat/Lane: 19 Adjustment: 0.	1900 1900 1900 0.95 1.00 0.85	0 1900 1900 5 0.95	1900	1900 1900	0 1900	1900 1900	1900	Sat/Lane: Adjustment:	1900 1900	1900	1900 1900	1900	1900 1900	1900	1900 1900	1900
	1.00	1.00	0.71			1.00		Lanes: Final Sat.:	0.00 1.00				1.32			
Capacity Analysis Module:	ysis Module:		90			31.0000		Capacity Analysi	 ysis Module							; (
			3					Crit Moves:		* *			* * * * * * * * * * * * * * * * * * * *			
¯	0.20 0.28 0.57 0.70 0.36 0.58	_	0.20	0.20 0.20 0.43 0.48	0 0.20 8 0.50	_		Green/Cycle: Volume/Cap:	0.00 0.33	0.33	0.00 0.33	0.33	0.20 0.20	0.20	0.36 0.36 0.44 0.05	0.36
Level Of Service Module								Level Of Service Module	rice Module:			_	1 7		;	1 1
	1.00 1	1.00	1.00	1.00 1.00		1.00		••	1.00 1.00				1.00		1.00 1.00	
Queue:	7 4 10	6 14/.1 22.U 0 16 3	2.2	4 4	4 4.4	23.7 20.3	8 8	Adjbei/ven: Queue:	0.0 16.2	17.1	0.0 15.3	15.3	21.6 21.6	21.6	16.0 13.4 6 1	13.5
********	****	****	* * * * * * *	***	****	***	* * * * * * * * * * * * * * * * * * * *	***	******	* * * * *	*****	* * * *	***	* * * *	****	* * * * *

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Table J.7-10 (Continued)

D-PM.CMD	Tue Nov 5, 1996 10:50:3	:50:39	Page 16-1	D-PM.CMD	Tu	Tue Nov 5, 1996 10:	:50:39	Page 17-1
PIS	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	0 EIS/EIR 11 Alternative			FISCC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern PM Peak Hour	EIS/EIR	
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Level Of Service Computation Report perations Method (Future Volume Alt ***********************************	Computation Report (Future Volume Alternative ************************************	* :	1994 ***********************************	Level Of Service C 1994 HCM Operations Method (************************************	Level Of Service Computation Report Operations Method (Future Volume Alt ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	*
Cycle (sec): 100 Loss Time (sec): 10 (Y+R = Optimal Cycle: 70	<pre></pre>	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	* * *	**************************************	**************************************	**************************************	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 5 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 35 Level Of Service:	**************************************
**************************************	**************************************	************ East Bound L - T - R	**************************************	**************************************	**************************************	**************************************	East Bound L - T - R	**************************************
Control: Protected Rights: Include	Protected Ovl	Protected Include	Protected Include	Control: Rights:	Protected Include	Protected Include	red	rotected Include
2 0 0 1	1 0 0 0	0 7 0		Lanes:	0 0 0	0 0 0 0	0 0 2 0 1	2 0 2 0 0
Volume Module: Base Vol: 0 197 3	2 0 205	0 108 0	0 0 53 1	Volume Module: Base Vol:	0 0 0 0		7 0 0 0	378 0 0
. 0 197 478 0	0 0 0		£5 0 0 23 C	٠	000		0 0 0	0 220
1: 0 0	00	0 2	0 0	PasserByVol:	00	00	0 6 6	
1.00 1.00 1	1.00 1.00	1.00 1.00 1.0	1.00 1.00 1		1.00	1.00	1.00	1.00
PHF Adj: 1.00 1.00 1.00 PHF Volume: 478 197 3	1.00 1.00 1.00	1.00 1.00 1.0 417 125	0 1.00 1.00 1.00 0 0 58 1	PHF Ad]: 1 PHF Volume:	0 0 0 0 0	1.00 1.00 1.00	1.00 1.00 1.00 0 434 670	1.00 1.00 1.00 378 770 0
Reduct Vol: 0 0 0 0 Reduced Vol: 478 197 3	0 0 0 0	0 0 417 125	0 0 0 0	Reduct Vol: Reduced Vol:	0 0	0 0	0 0 0 0 0 434 670	0 0 0 0 378 770 0
1.00 1.00 1	1.00 1.00	1.00 1.00	1.00 1.00 1	, n	1.00	1.00	1.00	1.00
MLF Ad]: 1.03 1.00 1.00 Final Vol.: 492 197 3	1.00 1.00 1.13	417 131 0	1.00 1.05 1.0 0 61	MLF AG]: I Final Vol.:	0 0 0 0	0 0 0 0	0 456 670	389 808 0.1
Saturation Flow Module:			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Saturation Flow Module:	>w Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1900 1900	1900 1900	1900 1900	1900 1900	П,	1900	1900	1900	1900
Lanes: 2.00 0.98 0.02	1.00 0.00 2.00	1.00 2.00 0.00	0 0.00 1.97 0.03	Adjustment: 1 Lanes: 0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 2.00 1.00	2.00 2.00 0.00
Final Sat.: 3610 1872 29	1805	1805	0 0 3739 61	Final Sat.:	0 0 0	0 0 0	0 3800 1615	3610 3800 0
Capacity Analysis Module: Vol/Sat: 0.14 0.11 0.11	0.00 0.00 0.17	0.23 0.03 0.00	0 0.00 0.02 0.02	Capacity Analysis Vol/Sat: 0.00	rsis Module: 0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.12 0.41	0.11 0.21 0.00
	0.13 0	0.31 0.51 0.00 0.73 0.07 0.00	0.00		0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.75 0.75 0.00 0.00 0.16 0.55	0.20 0.95 0.00 0.55 0.22 0.00
							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Vice Module: 27.7 20.3	24.6 0.0	23.1 7.9	0.0 21.0	>	••	0.0	2.2	0.1
User DelAdj: 1.00 1.00 1.00 AdiDel/Veh: 27 7 20 3 20 3	1.00 1.00 1.00	23.1 7.9 0.0	0 1.00 1.00 1.00	User DelAdj: 1 AdiDel/Veh:	1.00 1.00 1.00	0.0 0.0 0.0	1.00 1.00 1.00	1.00 1.00 1.00
14 5	0	. 7	0 1		0	0	4	! -
***************************************	****	**********	******	***	***	****	*****	***

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Table J.7-10 (Continued)

	N A A	FISCO/FOIC VISION ZUOU ELS/EIK Reduced Harbor Fill Alternative PM Peak Hour	J EIS/EIK Alternative			14	FISCO/Port Reduced	t Vision 2000 ed Harbor Fill PM Peak Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	e V		
1; ************************************	Level Of Service Comput 1994 HCM Unsignalized Method (Futu **********************************	Level Of Service Computation Report signalized Method (Future Volume Al xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative) ***********************************	** * * * * * * * * * * * * * * * * * *		Level Of Service Computation 1994 HCM Operations Method (Future Vo ************************************	Level Of Service Operations Method ************************************	Service Compu. Method (Futu: ***********************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	ernative		
Average Delay (sec/veh):	(sec/veh):	2.3 WC	Average Delay (sec/veh): 2.3 Worst Case Level Of Service:		Cycle (sec):	100	£	Critical	cal Vol./Cap.	(x):		825
Approach:	North Bound	South Bound	East Bound	West Bound	Optimal Cycle	** ** * . ()	1 *	Sec) Average Level	* sec. Average Deray (sec./veii) Level Of Service: ******************	· ^CII') :	***	****************
					Approach:	North Bound		South Bound	East Bound	nnd		Bound
Control: Rights:	Uncontrolled Include	Uncontrolled Include	Stop Sign Include	scop sign Include	Movement:	- 1 - 1		X :	a <u> </u>	<u>-</u>	T	· ; ;
Danes:		7			Rights:	Spire Fuas Include		Include	Include	d d	Include	nde
Volume Module:	. 021			. r	Min. Green:	10 20	20 10	0 20 20	10 20	5 20	10 20	20 -
Growth Adj:	1.00	1.00 1.0	1.00 1.00 1.0	0 1.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		÷			1		ļ
Initial Bse:	0 62 130	4 0 0	0 0	115 0 7	Volume Module Rase Vol.	e: 75 77	0 75 0	c	776 20 2	'n	7	220
PasserByVol:) T #	0		. 0	Growth Adj:	1.00	-	1.00 1.0	1.00 1		ч	Н
Initial Fut:		288	0	115 0	Initial Bse:	72		0	86			
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	Added Vol:	0 183	234 (0 128	0 0 74	00	159 51	00
FHF Adj: PHF Volume:			0 0	0 - 0	rasserbyvor: Initial Fut:	255	75	128	86 35	- m	50	33
Reduct Vol:	0	0	0	0	User Adj:	1.00		1.00	1.00	1.00		
Final Vol.:	0 479 130	4 288 0	0 0	115 0 7	PHF Adj:	1.00 1.00 1	-	1.00 1.0	1.00 1	1.00		Н
Aujusteu volume module: Grade:	: #0 0	%	o,ko	•\ <u>*</u>	Reduct Vol:	0	0 0	0	166 99 0	n 0	0 0	0 0
% Cycle/Cars:	XXX	xxxx xxxx	XXXX XXXX	xxxx xxxx	Reduced Vol:	255		128	86 35		20	33
% Truck/Comb:	: xxxx xxxx	xxxx xxxx	XXXX XXXX	xxxx x	PCE Adj:	1.00		1.00	1.00			
PCE Adj:	Ξ.	1.10 1.00 1.00	1.10 1.10 1.10	<u>~</u>	MLF Adj:	1.05	-	1.00 1.0	1.00 1		_	_
Cycl/Car PCE:	XXXX	XXXX XXXX		XXXX XXXX	Final Vol.:	75 268	245 797	128	6 86 369	m =	159 557	363
Adi Vol.:	. AAAA AAAA 0 479 130	4 288 0	0 0 0	127 0 8	Saturation Flow Module	low Module:				-		} ; ; ;
Critical Gap Module:	Module:				Sat/Lane:			1900	1900			1900
MoveUp Time:	MoveUp Time:xxxx xxxx xxxxx	2.1 xxxx xxxxx	2.1 xxxx xxxxx xxxxx xxxxx	xxxx 1	Adjustment:	0.93		0.99	0.95			
Critical Gp::	Critical Gp:xxxxx xxxx xxxxx	5.5 xxxx xxxxx	xxxx xxxx	7.0 xxxx 5.5		1.04		0.96.0	1.00			
Capacity Module.		 	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Final Sat.:	1805 1846 1	1688 3610	1797 84	4 1805 3769	31 1	1805 3244	2114
Inflict Vol:	Conflict Vol: xxxx xxxx xxxxx	xxxxx xxxx 609	XXXX XXXX XXXX	836 xxxx 305	Capacity Analysis	lysis Module:	_		Ξ	=		
Potent Cap.:	Potent Cap.: xxxx xxxx xxxxx	807 xxxx xxxxx		6 xxxx	Vol/Sat:	0.15	0.15 0.22	70.07 0.03	7 0.05 0.10	0.10	0.09 0.17	7 0.17
Adj Cap:	XXXXX XXXX XXXX	1.00 xxxx xxxxx		9 xxxx 1	Crit Moves:	* * *	* *		* * *		* * *	
Move Cap.:	XXXXX XXXXX	7 xxxx x	xxxx xxx	08 xxxx 90	Green/Cycle:	0.21 0.21		0.32			.12 0.2	
	!		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Volume/Cap:	0.19 0.68 0	0.68 0.68		0.48	0.42 0	.75 0.68	3 0.68
Level of Service Module: Stopped Del:xxxx xxxx x	Level of Service Module: Stopped Del:xxxxx xxxx xxxxx	4.5 xxxx xxxxxx	4.5 xxxx xxxxx xxxxx xxxxx	18.6 xxxx 3.7	Level Of Service Module	vice Module:	-	; ; ; ; ;	1		1	1
LOS by Move:	*	*	*	*	Delay/Veh:	20.9 25.1 2	25.1 19.	9 15.9 15.9	9 29.0 21.2	21.2	36.9 22.8	3 22.8
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	User DelAdj:	1.00 1.00	1.00 1.00	00.1.00	1.00	1.00	1.00 1.00	1.00
Shared Cap.:	Shared Cap.: xxxx xxxx xxxxx	XXXX XXXX XXXX	XXXX XXXX XXXX	XXXX XXXX XXXX	AdjDel/Veh:	20.9 25.1 2	5.1 19.9	15.9	9 29.0 21.2	21.2	36.9 22.8	3 22.8
Shrd StpDel:	XXXXX XXXX XXXXX	XXXXX XXXX	×	xxxxx xxxx xxxxx	Onene:	2 7	7 20	0 3	0 2 9	0	5 14	1 10
Shared LOS:	*	*	*	*	****	****	*****	********	*****	*****	****	****
Annua Colde			•	0 7.								

A-AM-MIT.CMD	Tue Nov 5, 1996 1	1996 13:36:24	Page 1-1	I able J./-II A-PM-MIT.CMD	F	Tue Nov 5, 1996 13:	13:37:22	Page 1-1
FI: Maximum Marind	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative - Mitigated AM Peak Hour	00 EIS/EIR ernative - Mitiga r	eq		FISC Maximum Marine/P	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative - PM Peak Hour	D EIS/EIR	1 1 1 1 1 1 1 1 1 1
<pre>Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************</pre>	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	tation Report re Volume Alterna ************************************	*	1994 ***********************************	Level (1994 HCM Operation)	Level Of Service Compute Operations Method (Future	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #8 Adeline St./ 3rd St.	! * !
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 82 Level Of Service:	Critic R = 4 sec) Averac Level	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	0.675 28.9 D	Cycle (sec): Loss Time (sec): Optimal Cycle:	.c): 12 (Y+R == 82	**************************************	* 🕮	**************************************
Approach: North Bound Movement: L - T - R	South Bound L - T - R	East Bound L - T - R		Approach: Movement:		South Bound	East Bound L - T - R	West Bound L - T - R
Control: Split Phase Rights:	Split Phase	- Protected Tnclude	Protected	Control:	Split Phase	Split Phase	Protected	Protected
een: 10 20 0 1 0 1	0 10	10	10	Min. Green: Lanes:	10 20 20 0 1 0 1 0	10 20 20 0 1 0 1 0	10 20 20	10 20 20 10 0 1 0
Volume Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Volume Module				
80 0	26 0	8 6	50 59	Base Vol:	36 0	0	14 13	39
Initial Bse: 8 0 31	0 1.00 1.00 1.00 1 26 0 26	1.00 1.00 1.00 5 8 6 29	1.00 1.00 1.00	Growth Adj: Initial Bse:	1.00 1.00 1.00 36 0 122	1.00 1.00 1.00 43 0 15	1.00 1.00 1.00 1 30 14 13	1.00 1.00 1.00 89 39 78
Added Vol: 0 778	0 1020		0 0	Added Vol:	0 955 0	0 628 0	0 (0 (
ut: 8 778	26 1020	, w , w	5 65 05	Initial Fut:	955 12	628 1	30 14 13	89 39 78
User Adj: 1.00 1.00 1.00 phr adi: 1.00 1.00	0 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	User Adj:	1.00 1.00 1.00	1.00	1.00 1.00	1.00 1.
8 778	26 1020	9	50 59	PHF Volume:	955	43 628 15	30 14 13	1.00 1.00 89 39 78
Reduct Vol: 0 0 0 0 Reduced Vol: 8 778 31	0 0 26 1020 2	0 0 0 0	50 59 56	Reduct Vol: Reduced Vol:	36 955 122	43 628 15	30 0 0	0 0 0 0 0 0 0
1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PCE Adj:	1.00	1.00 1.	1.00 1.00 1	1.00
(d): 1.05 1.05 1. Vol.: 8 817	05 1.05 1.05 1.05 33 27 1071 27	1.00 1.00 1. 8 6	1.00 1.00 1.00 50 59 56	MLF Adj: Final Vol.:	1.05 1.05 1.05 38 1003 128	1.05 1.05 1.05 45 659 16	1.00 1.00 1.00 1 30 14 13	1.00 1.00 1.00 89 39 78
n Flow Module:		<u>:</u>		Saturation Fl	Flow Module:			1 1 1 1 1 1 1 1 1 1 1
Sat/Lane: 1900 1900 1900 Adjustment: 0.99 0.99 0.99	0 1900 1900 1900 9 1.00 1.00 1.00	1900 1900 1900 0.95 0.88 0.88	1900 1900 1900 0.93	Sat/Lane: Adjustment:	1900 1900 1900 0.98 0.98	1900 1900 1900	1900 1900 1900 1	1900 1900 1900
0.02 1.90	0.05 1.90	1.00 0.17	1.00 0.51	,	1.72	1.84	0.52 0.48	0.33
7000 00	0105 16		=	rinai sat.:	121 3195 408	238 3478 84	1805 916 851 1 	1805 570 1140
Capacity Analysis Module: Vol/Sat: 0.23 0.23 0.23 Crit Moves:	3 0.30 0.30 0.30 ** ****	0.00 0.02 0.02	0.03 0.07 0.07	Capacity Analysis Vol/Sat: 0.31 Crit Moves:	ysis Module: 0.31 0.31 0.31	0.19 0.19 0.19	0.02 0.02 0.02 0	.05 0.07 0.07
Green/Cycle: 0.25 0.25 0.25 Volume/Cap: 0.90 0.90 0.90	5 0.33 0.33 0.33 0 0.90 0.90 0.90	3 0.10 0.20 0.20 0 0.04 0.10 0.10		<pre>Green/Cycle: Volume/Cap:</pre>	0.36 0.36 0.36 0.86 0.87	0.22 0.22 0.22 0.87 0.87 0.87	0.10 0.20 0.20 0 0.17 0.08 0.08 0	0.10 0.20 0.20 0.49 0.34 0.34
Level Of Service Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Level Of Service Modul	ice Module:			
	9 27.6 27.6 27.6 0 1.00	5 26.3 21.1 21.1	27.1 22.3 22.3 1.00 1.00	Delay/Veh: User DelAdi:		31.2 31.2 31.2 1.00 1.00	26.6 21.0 21.0 2	29.3 22.4 22.4
	27.6 27.6	26.3 21.1	27.1 22.3		23.7	31.2	21.0 21.0	22.4
************************	****	***********	***********	*******	********	******	*********	***********

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AM Peak Hour

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********** ***************

L - T - R West Bound

78 1.00

0

1.00 1.00 78 1.00 1.00 1900 06.0 0.67 0.07

22.4 1.00

PM Peak Hour

Minimum Marine/Minimum Rail Alternative - Mitigated

Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	ction #8 Adeline St./ 3rd St.	Critical Vol./Cap. (X): c) Average Delay (sec/veh): Level Of Service:	######################################	Control: Split Phase Split Phase Protected Protected Rights: Include I	volume Module:	Base Vol: 36 0 122 43 0 15 30 14 13 89 39 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	. 50 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	891 122 43 570 15 30 14 13 89	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		VOI: 36 831 122 43 5/0 15 30 14 13 89 11 100 1.00 1.00 1.00 1.00 1.00 1.00 1	Final Vol.: 38 936 128 45 599 16 30 14 13 89 39	Flow Module: 1900 1900 1900 1900 1900 1900 1900 1900	ment: 0.98 0.98 0.98 1.00 1.00 1.00 0.95 0.93 0.93 0.95 0 0.07 1.70 0.23 0.14 1.81 0.05 1.00 0.52 0.48 1.00	Final Sat.: 128 3163 433 259 3449 92 1805 916 851 1805 570	le: 0.30 0.17	Green/Cycle: 0.37 0.37 0.31 0.21 0.21 0.10 0.20 0.20 0.10 0.20 Volume/Cap: 0.81 0.81 0.81 0.81 0.81 0.17 0.08 0.08 0.49 0.34	Level Of Service Module: Delay/Veh: 21.1 21.1 28.4 28.4 26.6 21.0 21.0 29.3 22.4 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
· · · · · · · · · · · · · · · · · · ·	***************************************	0.633 25.3 D	**************************************	Protected Include 10 20 20 1 0 0 1 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	50 59 56 1.00 1.00 1.00 50 59 56		59 2	00.4	101	1.00	50 59 56 50 59 56	1900	0.93 0	1805 907 860	0.03 0.07 0.07	0.10 0.20 0.20 0.28 0.33 0.33	27.1 22.3 22.3 1.00 1.00 1.00 27.1 22.3 22.3 ***********************************
Computation Report (Future Volume Alternative	***************************************	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	East Bound L - T - R	 Protected Include 10 20 20 1 0 0 1 0	+ + + + + + + + + + + + + + + + + + +	8 6 29 1.00 1.00 1.00		9 9 9	1.00 1.00 1.	00	1.001	1.00 1.00 1.	1900 1900 1900	0.95 0.88 0.88 1.00 0.17 0.83	1805 287 1385	0.00 0.02 0.02	0.10 0.20 0.20 0.00 0.04 0.10 0.10	. 1.1 1.00 1.1 1.1 1.1
	Intersection #8 Adeline St./ 3rd St.	Critica = 4 sec) Averago Level (**************************************			26 0 26 1.00 1.00 1.00	0 996 0	26 96	1.00 1.00	0 0 0	1.00 1.00	27 1014 27	1900 1900	1.00 1.00 1. 0.05 1.90 0.	96 3608 96	0.28 0.28 0.28	0.33 0.33 0.33 0.33 0.84 0.84 0.84	Level Of Service Module: Delay/Veh: 28.1 28.1 28.1 23.6 23.6 26.3 21.1 2 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1 AdjDel/Veh: 28.1 28.1 28.1 23.6 23.6 25.3 21.1 2 Queue: 1 2 1 28 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Level Of Service	Intersection #8 Adeline St./	100 c): 12 (Y+R = : 82	**************************************	Split Phase Include 10 20 20 0 1 0 1 0		8 0 31 1.00 1.00 1.00	0 700 0	700	1.00 1.00 1.00	0		1.05 1.05 1.05 8 735 33	dule: 1900	1.89	39 3563 160	ysis Module: 0.21 0.21 0.21 ****	0.25 0.25 0.25 0.25 0.84 0.84	Level Of Service Module: Delay/Veh: 28.1 28.1 28.1 User DelAdj: 1.00 1.00 1.00 AdjDel/Veh: 28.1 28.1 28.1 Queue:: 1 21 2
	section 4	Cycle (sec): Loss Time (sec) Optimal Cycle:	**************************************	Control: Rights: Min. Green: Lanes:	Volume Module:	Base Vol: Growth Adj: 1	Added Vol:	rasserbyvol: Initial Fut:		Reduct Vol:	. 10/	_	Saturation Flo Sat/Lane:		Final Sat.:	Capacity Analysis Vol/Sat: 0.21 Crit Moves:	Green/Cycle: (Volume/Cap: (Level Of Serv' Delay/Veh: User DelAdj: J AdjDel/Veh: Z Queue:

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Table J.7-11 (Continued) Page 1-1 C-PM-MIT.CMD

Particular Machine Marine Ma	C-AM-MIT.CMD	1 2 2 1 1 1 1 1 1	Tue Nov 5, 1996	1996 14:05:58	; ;		Page	1-1	e 1-1 C-PM-MIT.CMD	^	ŢŢ.	Tue Nov 5,	1996 14	14:05:26		Δı	Page 1-1
1994 March General Control Contr		FISC Maximum Marine/	CO/Port Vision; Winimum Rail Al AM Peak Ho	2000 EIS/E: lternative our	IR - Miti	gated				Maximum Ma	FISCO,	/Port Vis inimum Ra. PM Pe	ion 200 il Alte ak Hour	ا بعم ا	 Mitigat	1 1 1 1 1 1 1 0) (1 ! !
Control 100 Control 10	**************************************	Level 1994 HCM Operati ************************************	Of Service Composite Service S	putation Reture Volume	eport e Alter	native *****	* * * * * * * * * * * * * * * * * * * *	** ** ** **	**************************************	I 1994 HCM OF *********	Level 01 Deration	E Service 18 Method 1*******	Comput (Futur	ation Report Volume A.	rt lternat *****	ive) *****	1 # 1 # 1 # 1 # 1 # 1 # 1 # 1 # 1 # 1 #
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Tue Nov 5, 1996 14:07:36

D-AM-MIT.CMD

Tue Nov 5, 1996 14:08:07

L - T - R 29.3 22.4 1.00 1.00 29.3 22.4 1 0 1900 0.10 10 0.95 1.00 1.00 00 1.00 0.05 1.00 1805 1994 HCM Operations Method (Future Volume Alternative) Reduced Harbor Fill Alternative - Mitigated 21.0 1.00 21.0 12 (Y+R = 4 sec) Average Delay (sec/veh): 0.20 13 0.93 0.02 1.00 1900 0.48 Critical Vol./Cap. (X): 0 L - T - R East Bound Protected Include 0 0 0.20 26.6 21.0 Level Of Service Computation Report 0.02 0.02 0.17 0.08 1.00 1.00 26.6 21.0 20 1.00 1.00 1.00 1.00 0.93 1900 1900 0.52 Level Of Service: FISCO/Port Vision 2000 EIS/EIR 1805 0.95 0.10 10 1.00 1.00 1.00 1.00 30 1.00 1.00 0.19 0.22 24.7 24.7 24.7 32.5 32.5 32.5 1.00 32.5 1.00 1.05 1900 83 0.89 20 1.00 1.00 PM Peak Hour 0 1 0 1 0 L - T - R Split Phase South Bound Include 32.5 32.5 2 20 0.19 0.19 1.00 1.00 640 1.84 0.22 0.22 0.89 0.89 1.00 1.00 1.00 640 1.00 1.00 1.05 1.05 1.00 1.00 233 3484 -----Intersection #8 Adeline St./ 3rd St. 70 1.00 1.00 1.00 0.12 43 0.32 0.32 0.32 1.00 00. 1.00 1.00 0.98 20 0 L - T - R North Bound Split Phase Capacity Analysis Module: 7 0 Include Level Of Service Module: 82 Saturation Flow Module: 24.7 24.7 70 1900 1900 0.36 0.36 0.89 0.89 User DelAdj: 1.00 1.00 1.00 979 1.00 1.00 1.05 1.05 38 1028 0.98 0.98 0.06 1.73 119 3206 1.00 1.00 1.00 7 1.00 10 Growth Adj: 1.00 36 Loss Time (sec): Optimal Cycle: Volume Module: Cycle (sec): Green/Cycle: PasserByVol: Reduced Vol: Volume/Cap: AdjDel/Veh: Initial Bse: Initial Fut: Adjustment: Final Sat.: Final Vol.: Crit Moves: PHF Volume: Reduct Vol: Min. Green: Delay/Veh: Added Vol: Jser Adj: Approach: Movement: Base Vol: Sat/Lane: PCE Adj: PHF Adj: Control: MLF Adj: Lanes: 0.07 1.00 0.49 0.20 1.00 1.00 0.93 1.00 00. 0 L - T - R West Bound Protected Include 0 30.5 0.688 1.00 1.00 27.1 22.3 20 1.00 0.93 0.51 0.02 0.03 0.07 0.20 1.00 1.00 0.33 0 0.10 1.00 0.28 10 1.00 0.95 00 1994 HCM Operations Method (Future Volume Alternative) Reduced Harbor Fill Alternative - Mitigated 21.1 12 (Y+R = 4 sec) Average Delay (sec/veh): 82 Level Of Service: 1.00 0.20 0.10 0.88 0.83 20 1.00 Critical Vol./Cap. (X): L - T - R East Bound Protected 0 26.3 21.1 1.00 1.00 0.00 0.02 1805 287 0.10 0.20 0.10 26.3 21.1 Level Of Service Computation Report 1.00 1900 1900 0.88 00 1.00 1.00 0.17 FISCO/Port Vision 2000 EIS/EIR 0 0.95 0.04 10 1.00 1.00 1.00

06.0

0.90 0.33

1900

0.67 1140 0.07

0.07 0.20

1.00

1.00

1.00 1.00

1.00 1.00

1.00

1.00

0

West Bound

0.680 27.3 Protected Include 0

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29.2 1.00

29.2 29.2 1.00 1.00 33.9 29.2 29.2

1.00

AdjDel/Veh: 33.9 33.9

User DelAdj: 1.00 1.00

33.9 33.9 33.9

Delay/Veh:

Level Of Service Module:

29.5

0.30

0.23 0.23 0.23 0.30 0.30

Capacity Analysis Module:

26 1.00 1.05

1.00 1.05

Reduced Vol:

PCE Adj:

MLF Adj:

1.00 1.00

1.00 1.00 1.00 1.00 26 1048 0 26 1048 1.00 1.00 1.05 1.05 27 1100

1.00

1.00

Jser Adj:

PHF Adj:

1.00 1.00

ω 0 œ

PHF Volume:

Reduct Vol:

20

20

2

20 0

20

10

Min. Green:

Include 0

1.00 1.00

1.00 793 793 1.00 793 793 1.00 1.00 1.05 1.05 8 832

Growth Adj: 1.00

Initial Bse: PasserByVol: Initial Fut:

Added Vol:

Jolume Module:

Base Vol:

1048 26 1048

L - T - R

- T -Split Phase

Movement:

Control:

Rights: anes:

North Bound

South Bound

Intersection #8 Adeline St./ 3rd St.

Loss Time (sec): Optimal Cycle:

Cycle (sec):

Split Phase

Include

1900 1.00

1900 1900

1900

1900 1900 0.99 0.99 0.02 1.91 34 3585

> Adjustment: Final Sat.:

Lanes:

Sat/Lane:

Saturation Flow Module:

Final Vol.:

0.05

0.05 1.90

1.00 1.00 89 3622

89

0.33

0.33 0.33 0.92 0.92

0.25

Green/Cycle: 0.25 0.25

Crit Moves:

Vol/Sat:

0.92 0.92

Volume/Cap:

0.92

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1.00

22.4

Appendix J.8 Freeway LOS Calculations - AM and PM Peak Hour

Table J.8-1
Freeway Level of Service Calcuations - AM Peak Hour

1. I-80 at the Bay Bridge

Alternative		el of vice		ime/ acity		mber anes	Traffic	Volume		ige in ume
	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	С	F	0.61	1.07	5	5	6,130	10,728	0	0
Maximum Marine/Maximum Rail	С	F	0.62	1.08	5	5	6,207	10,758	77	30
Minimum Marine/Minimum Rail	С	F	0.62	1.08	5	5	6,184	10,753	54	25
Maximum Marine/Minimum Rail	С	F	0.62	1.08	5	5	6,219	10,760	89	32
Reduced Harbor Fill	С	F	0.62	1.08	5	5	6,209	10,758	79	30

2. I-80 Between I-880 & I-580

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		ige in ume
	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	В	F	0.44	1.08	3	3	2,665	6,492	0	0
Maximum Marine/Maximum Rail	В	F	0.44	1.08	3	3	2,654	6,487	-11	-5
Minimum Marine/Minimum Rail	В	F	0.45	1.08	3	3	2,675	6,509	10	17
Maximum Marine/Minimum Rail	В	F	0.44	1.08	3	3	2,646	6,477	-19	-15
Reduced Harbor Fill	В	F	0.44	1.08	3	3	2,652	6,485	-13	-7

3. I-80 East of I-80/I-580 Split

Alternative		el of vice		ume/ acity		mber .anes	Traffic	Volume		ige in ume
	EB†	WB†	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	D	F	0.86	1.09	4	4	6,877	8,714	0	0
Maximum Marine/Maximum Rail	D	F	0.86	1.09	4	4	6,913	8,743	36	29
Minimum Marine/Minimum Rail	D	F	0.86	1.09	4	4	6,914	8,754	37	40
Maximum Marine/Minimum Rail	D	F	0.86	1.09	4	4	6,915	8,752	38	38
Reduced Harbor Fill	٥	F	0.86	1.09	4	4	6,913	8,745	36	31

4. I-880 Connector to I-80 East

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		ige in ume
·	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	С	0.40	0.59	2	2	1,610	2,379	0	0
Maximum Marine/Maximum Rail	В	С	0.42	0.61	2	2	1,674	2,434	64	55
Minimum Marine/Minimum Rail	В	С	0.41	0.60	2	2	1,646	2,417	36	38
Maximum Marine/Minimum Rail	В	C	0.42	0.61	2	2	1,679	2,446	69	67
Reduced Harbor Fill	В	С	0.42	0.61	2	2	1,676	2,438	66	59

5. I-880 Connector to I-80 West

Alternative		el of vice	Volu Cap	ıme/ acity	1	mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	Α	Α	0.33	0.20	2	2	1,300	810	0	0
Maximum Marine/Maximum Rail	Α	Α	0.33	0.22	2	2	1,318	881	18	71
Minimum Marine/Minimum Rail	Α	Α	0.33	0.22	2	2	1,335	882	35	72
Maximum Marine/Minimum Rail	Α	Α	0.33	0.22	2	2	1,313	884	13	74
Reduced Harbor Fill	Α	Α	0.33	0.22	2	2	1,317	882	17	72

6. I-880 North of 7th St.

Alternative		el of vice	Volu Cap	ime/ acity		mber .anes	Traffic	Volume		ge in ıme
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	В	0.40	0.38	3	3	2,412	2,276	0	0
Maximum Marine/Maximum Rail	В	В	0.41	0.39	3	3	2,454	2,313	42	37
Minimum Marine/Minimum Rail	В	В	0.40	0.38	3	3	2,384	2,256	-28	-20
Maximum Marine/Minimum Rail	В	В	0.39	0.37	3	3	2,351	2,220	-61	-56
Reduced Harbor Fill	В	В	0.41	0.39	3	3	2,457	2,319	45	43

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-1 (Continued) Freeway Level of Service Calcuations - AM Peak Hour

7. I-880 South of 7th St.

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	С	В	0.64	0.42	3	3	3,844	2,509	0	0
Maximum Marine/Maximum Rail	С	В	0.67	0.44	3	3	4,030	2,665	186	156
Minimum Marine/Minimum Rail	С	В	0.66	0.43	3	3	3,931	2,584	87	75
Maximum Marine/Minimum Rail	С	В	0.63	0.41	3	3	3,793	2,436	-51	-73
Reduced Harbor Fill	С	В	0.67	0.44	3	3	4,022	2,661	178	152

8. I-880 North of I-980

Alternative		el of vice		ıme/ acity		mber .anes	Traffic '	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	С	Α	0.63	0.33	3	3	3,757	1,981	0	0
Maximum Marine/Maximum Rail	С	Α	0.65	0.35	3	3	3,900	2,096	143	115
Minimum Marine/Minimum Rail	С	Α	0.65	0.35	3	3	3,872	2,089	115	108
Maximum Marine/Minimum Rail	С	Α	0.63	0.35	3	3	3,768	2,100	11	119
Reduced Harbor Fill	С	Α	0.65	0.35	3	3	3,890	2,095	133	114

9. I-880 South of I-980

Alternative		el of vice		ıme/ acity		mber anes	Traffic '	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	E	С	0.93	0.66	4	4	7,447	5,258	0	0
Maximum Marine/Maximum Rail	Ε	С	0.95	0.67	4	4	7,598	5,373	151	115
Minimum Marine/Minimum Rail	Ε	С	0.95	0.67	4	4	7,585	5,366	138	108
Maximum Marine/Minimum Rail	Ε	С	0.95	0.67	4	4	7,621	5,377	174	119
Reduced Harbor Fill	Ε	С	0.95	0.67	4	4	7,603	5,372	156	114

10. I-880 North of I-238

Alternative		el of vice		ime/ acity	1	mber anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	D	1.14	0.90	4	4	9,080	7,168	0	0
Maximum Marine/Maximum Rail	F	D	1.15	0.91	4	4	9,231	7,283	151	115
Minimum Marine/Minimum Rail	F	D	1.15	0.91	4	4	9,218	7,276	138	108
Maximum Marine/Minimum Rail	F	D	1.16	0.91	4	4	9,254	7,287	174	119
Reduced Harbor Fill	F	D	1.15	0.91	4	4	9,236	7,282	156	114

11. I-880 South of I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume	Char Volu	~ (
	NB	ŞB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	F	1.17	1.27	4	4	9,395	10,136	0	0
Maximum Marine/Maximum Rail	F	F	1.19	1.28	4	4	9,512	10,211	117	75
Minimum Marine/Minimum Rail	F	F	1.19	1.28	4	4	9,494	10,205	99	69
Maximum Marine/Minimum Rail	F	F	1.19	1.28	4	4	9,528	10,214	133	78
Reduced Harbor Fill	F	F	1.19	1.28	4	4	9,516	10,211	121	75

12. 1-238

Alternative	Lev Ser	el of vice	Volu Cap	ime/ acity		mber .anes	Traffic '	Volume	Chan Volu	ge in ume
	EB†	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	В	F	0.53	1.01	3	3	3,163	6,089	0	0
Maximum Marine/Maximum Rail	В	F	0.53	1.02	3	3	3,203	6,123	40	34
Minimum Marine/Minimum Rail	В	F	0.53	1.02	3	3	3,202	6,128	39	39
Maximum Marine/Minimum Rail	В	F	0.53	1.02	3	3	3,204	6,130	41	41
Reduced Harbor Fill	В	F	0.53	1.02	3	3	3,202	6,125	39	36

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-1 (Continued) Freeway Level of Service Calcuations - AM Peak Hour

13. I-580 East of I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume		ige in Ime
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	С	D	0.65	0.87	5	5	6,539	8,658	0	0
Maximum Marine/Maximum Rail	С	D	0.66	0.87	5	5	6,579	8,693	40	35
Minimum Marine/Minimum Rail	С	D	0.66	0.87	5	5	6,578	8,700	39	42
Maximum Marine/Minimum Rail	С	D	0.66	0.87	5	5	6,580	8,699	41	41
Reduced Harbor Fill	С	D	0.66	0.87	5	5	6,578	8,694	39	36

14. I-580 West of I-238

Alternative		el of vice	Volu Cap	ime/ acity		mber anes	Traffic '	Volume		ige in ume
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Maximum Marine/Maximum Rail	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Minimum Marine/Minimum Rail	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Maximum Marine/Minimum Rail	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Reduced Harbor Fill	D	Е	0.93	0.95	4	4	7,418	7,630	0	0

15. I-580 East of I-980/SH 24

Alternative		el of vice		ıme/ acity	1	mber .anes	Traffic '	Volume	Chan Volu	ige in ume
	EB	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	С	F	0.60	1.09	4	4	4,783	8,698	0	0
Maximum Marine/Maximum Rail	С	F	0.60	1.09	4	4	4,783	8,698	0	0
Minimum Marine/Minimum Rail	С	F	0.60	1.09	4	4	4,783	8,698	0	0
Maximum Marine/Minimum Rail	С	F	0.60	1.09	4	4	4,783	8,698	0	0
Reduced Harbor Fill	O	F	0.60	1.09	4	4	4,783	8,698	0	0

16. I-580 West of I-980/SH 24

Alternative		el of vice	Volu Cap	ime/ acity	1	mber .anes	Traffic	Volume	Chan Volt	ige in ume
	EB†	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	С	E	0.67	0.98	5	5	6,665	9,843	0	0
Maximum Marine/Maximum Rail	С	E	0.67	0.99	5	5	6,681	9,864	16	21
Minimum Marine/Minimum Rail	С	Ε	0.67	0.99	5	5	6,675	9,858	10	15
Maximum Marine/Minimum Rail	С	Ε	0.67	0.99	5	5	6,676	9,857	11	14
Reduced Harbor Fill	С	E	0.67	0.99	5	5	6,681	9,864	16	21

17. 1-980

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume	Chan Volu	ige in ume
	NB†	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	D	0.43	0.83	4	4	3,403	6,619	0	0
Maximum Marine/Maximum Rail	В	D	0.42	0.82	4	4	3,391	6,599	-12	-20
Minimum Marine/Minimum Rail	В	D	0.42	0.83	4	4	3,398	6,612	-5	-7
Maximum Marine/Minimum Rail	В	D	0.42	0.83	4	4	3,397	6,609	-6	-10
Reduced Harbor Fill	В	D	0.42	0.83	4	4	3,391	6,600	-12	-19

18. SH 24 East of I-580

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume	Chan Volu	•
	EB†	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	Α	F	0.30	1.01	4	4	2,436	8,090	0	0
Maximum Marine/Maximum Rail	Α	F	0.31	1.01	4	4	2,448	8,091	12	1
Minimum Marine/Minimum Rail	Α	F	0.31	1.01	4	4	2,444	8,095	8	5
Maximum Marine/Minimum Rail	Α	F	0.31	1.01	4	4	2,450	8,093	14	3
Reduced Harbor Fill	Α	F	0.31	1.01	4	4	2,449	8,091	13	1

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-2
Freeway Level of Service Calculations - PM Peak Hour

1. I-80 at the Bay Bridge

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume		nge in ume
	EB	WB†	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	F	С	1.18	0.73	5	5	11,845	7,305	0	0
Maximum Marine/Maximum Rail	F	С	1.19	0.74	5	5	11,873	7,375	28	70
Minimum Marine/Minimum Rail	F	С	1.19	0.74	5	5	11,868	7,355	23	50
Maximum Marine/Minimum Rail	F	С	1.19	0.74	5	5	11,876	7,386	31	81
Reduced Harbor Fill	F	С	1.19	0.74	5	5	11,873	7,377	28	72

2. I-80 Between I-880 & I-580

Alternative		el of vice		ime/ acity		mber anes	Traffic	Volume		nge in ume
Alternative	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	С	В	0.70	0.41	3	3	4,217	2,430	0	0
Maximum Marine/Maximum Rail	Ç	В	0.70	0.40	3	3	4,211	2,422	-6	-8
Minimum Marine/Minimum Rail	C	В	0.71	0.41	3	3	4,233	2,439	16	9
Maximum Marine/Minimum Rail	С	В	0.70	0.40	3	3	4,202	2,416	-15	-14
Reduced Harbor Fill	С	В	0.70	0.40	3	3	4,209	2,420	-8	-10

3. I-80 East of I-80/I-580 Split

Alternative		el of vice		ime/ acity	11	mber anes	Traffic	Volume		nge in ume
	EB†	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	F	1.20	1.02	4	4	9,614	8,123	0	0
Maximum Marine/Maximum Rail	F	F	1.21	1.02	4	4	9,650	8,151	36	28
Minimum Marine/Minimum Rail	F	F	1.21	1.02	4	4	9,656	8,153	42	30
Maximum Marine/Minimum Rail	F	F	1.21	1.02	4	4	9,658	8,153	44	30
Reduced Harbor Fill	F	F	1.21	1.02	4	4	9,651	8,151	37	28

4. I-880 Connector to I-80 East

Alternative		el of vice		ıme/ acity		mber anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	С	0.53	0.59	2	2	2,118	2,349	0	0
Maximum Marine/Maximum Rail	С	C	0.55	0.60	2	2	2,180	2,398	62	49
Minimum Marine/Minimum Rail	В	c	0.54	0.59	2	2	2,158	2,379	40	30
Maximum Marine/Minimum Rail	С	C	0.55	0.60	2	2	2,190	2,403	72	54
Reduced Harbor Fill	С	С	0.55	0.60	2	2	2,182	2,400	64	51

5. I-880 Connector to I-80 West

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	Α	Α	0.25	0.31	2	2	1,010	1,240	0	0
Maximum Marine/Maximum Rail	Α	Α	0.27	0.32	2	2	1,074	1,260	64	20
Minimum Marine/Minimum Rail	Α	Α	0.27	0.32	2	2	1,076	1,272	66	32
Maximum Marine/Minimum Rail	Α	Α	0.27	0.31	2	2	1,075	1,256	65	16
Reduced Harbor Fill	Α	Α	0.27	0.31	2	2	1,074	1,258	64	18

6. I-880 North of 7th St.

Alternative		el of vice		ime/ acity	ll .	mber .anes	Traffic '	Volume	Chan Volu	•
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	В	0.40	0.45	3	3	2,419	2,687	0	0
Maximum Marine/Maximum Rail	В	В	0.41	0.45	3	3	2,460	2,719	41	32
Minimum Marine/Minimum Rail	В	В	0.40	0.44	3	3	2,400	2,666	-19	-21
Maximum Marine/Minimum Rail	В	В	0.39	0.44	3	3	2,368	2,640	-51	-47
Reduced Harbor Fill	В	В	0.41	0.45	3	3	2,465	2,722	46	35

 $^{\ \ \, \}uparrow \ \ \, \text{Freeway segment is excluded from compliance with Alameda County CMA Standards}.$

Table J.8-2 (Continued) Freeway Level of Service Calculations - PM Peak Hour

7. I-880 South of 7th St.

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NΒ	SB	NB	SB	NB	SB
No Project	В	С	0.49	0.68	3	3	2,928	4,060	0	0
Maximum Marine/Maximum Rail	В	С	0.51	0.71	3	3	3,063	4,232	135	172
Minimum Marine/Minimum Rail	В	С	0.50	0.69	3	3	2,984	4,150	56	90
Maximum Marine/Minimum Rail	В	С	0.48	0.67	3	3	2,867	4,022	-61	-38
Reduced Harbor Fill	В	С	0.51	0.70	3	3	3,061	4,223	133	163

8. I-880 North of I-980

Alternative		el of vice	1	ime/ acity	1	mber .anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	В	0.48	0.50	3	3	2,869	3,015	0	0
Maximum Marine/Maximum Rail	В	В	0.49	0.53	3	3	2,963	3,166	94	151
Minimum Marine/Minimum Rail	В	В	0.49	0.53	3	3	2,944	3,150	75	135
Maximum Marine/Minimum Rail	В	В	0.48	0.53	3	3	2,859	3,185	-10	170
Reduced Harbor Fill	В	В	0.49	0.53	3	3	2,956	3,169	87	154

9. I-880 South of I-980

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	D	С	0.93	0.76	4	4	7,426	6,051	0	0
Maximum Marine/Maximum Rail	Ε	D	0.94	0.78	4	4	7,518	6,202	92	151
Minimum Marine/Minimum Rail	Ε	ם	0.94	0.77	4	4	7,514	6,186	88	135
Maximum Marine/Minimum Rail	Ε	D	0.94	0.78	4	4	7,524	6,221	98	170
Reduced Harbor Fill	Ε	D	0.94	0.78	4	4	7,518	6,205	92	154

10. I-880 North of I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	F	1.06	1.19	4	4	8,474	9,555	0	0
Maximum Marine/Maximum Rail	F	F	1.07	1.21	4	4	8,566	9,706	92	151
Minimum Marine/Minimum Rail	F	F	1.07	1.21	4	4	8,562	9,690	88	135
Maximum Marine/Minimum Rail	F	F	1.07	1.22	4	4	8,572	9,725	98	170
Reduced Harbor Fill	F	F	1.07	1.21	4	4	8,566	9,709	92	154

11. I-880 South of I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	F	1.20	1.21	4	4	9,574	9,655	0	0
Maximum Marine/Maximum Rail	F	F	1.20	1.22	4	4	9,636	9,768	62	113
Minimum Marine/Minimum Rail	F	F	1.20	1.22	4	4	9,632	9,750	.58	95
Maximum Marine/Minimum Rail	F	F	.1.21	1.22	4	4	9,640	9,782	66	127
Reduced Harbor Fill	F	F	1.20	1.22	4	4	9,636	9,770	62	115

12. 1-238

Alternative		el of vice		ime/ acity	1	mber anes	Traffic	Volume		ige in ume
	EB†	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	Е	D	0.95	0.79	3	3	5,699	4,748	0	0
Maximum Marine/Maximum Rail	E	D	0.96	0.80	3	3	5,738	4,778	39	30
Minimum Marine/Minimum Rail	E	D	0.96	0.80	3	3	5,741	4,778	42	30
Maximum Marine/Minimum Rail	Ε	D	0.96	0.80	3	3	5,743	4,779	44	31
Reduced Harbor Fill	Ε	D	0.96	0.80	3	3	5,738	4,778	39	30

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-2 (Continued) Freeway Level of Service Calculations - PM Peak Hour

13. I-580 East of I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume	Char Vol	ige in ume
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	D	D	0.89	0.81	5	5	8,888	8,147	0	0
Maximum Marine/Maximum Rail	D	D	0.89	0.82	5	5	8,927	8,176	39	29
Minimum Marine/Minimum Rail	D	D	0.89	0.82	5	5	8,930	8,178	42	31
Maximum Marine/Minimum Rail	D	D	0.89	0.82	5	5	8,932	8,178	44	31
Reduced Harbor Fill	D	D	0.89	0.82	5	5	8,927	8,176	39	29

14. I-580 West of I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		nge in ume
	ΕB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Maximum Marine/Maximum Rail	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Minimum Marine/Minimum Rail	F	'D	1.01	0.86	4	4	8,060	6,887	2	0
Maximum Marine/Minimum Rail	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Reduced Harbor Fill	F	D	1.01	0.86	4	4	8,058	6,887	0	0

15. I-580 East of I-980/SH 24

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		ige in ume
	EB	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	F	С	1.20	0.73	4	4	9,602	5,825	0	0
Maximum Marine/Maximum Rail	F	С	1.20	0.73	4	4	9,602	5,825	0	0
Minimum Marine/Minimum Rail	F	С	1.20	0.73	4	4	9,604	5,825	2	0
Maximum Marine/Minimum Rail	F	С	1.20	0.73	4	4	9,602	5,825	0	0
Reduced Harbor Fill	F	С	1.20	0.73	4	4	9,602	5,825	0	0

16. I-580 West of I-980/SH 24

Alternative		el of vice		ime/ acity	11	mber anes	Traffic	Volume		nge in ume
	EB†	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	F	С	1.09	0.73	5	5	10,851	7,322	0	0
Maximum Marine/Maximum Rail	F	С	1.09	0.73	5	5	10,871	7,334	20	12
Minimum Marine/Minimum Rail	F	С	1.09	0.73	5	5	10,865	7,330	14	8
Maximum Marine/Minimum Rail	F	С	1.09	0.73	5	5	10,864	7,330	13	8
Reduced Harbor Fill	F	С	1.09	0.73	5	5	10,871	7,334	20	12

17. I-980

Alternative	Lev Ser			ime/ acity	3	mber anes	Traffic	Volume		ge in ıme
	NB†	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	E	В	0.94	0.48	4	4	7,538	3,864	0	0
Maximum Marine/Maximum Rail	Ε	В	0.94	0.48	4	4	7,521	3,854	-17	-10
Minimum Marine/Minimum Rail	Ε	В	0.94	0.48	4	4	7,532	3,860	-6	-4
Maximum Marine/Minimum Rail	E	В	0.94	0.48	4	4	7,530	3,858	-8	-6
Reduced Harbor Fill	E	В	0.94	0.48	4	4	7,521	3,854	-17	-10

18. SH 24 East of I-580

Alternative		el of vice	Volu Cap	ime/ acity		mber .anes	Traffic '	Volume		ume
	EB†	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	В	1.11	0.46	4	4	8,905	3,717	0	0
Maximum Marine/Maximum Rail	F	В	1.11	0.46	4	4	8,907	3,719	2	2
Minimum Marine/Minimum Rail	F	В	1.11	0.47	4	4	8,910	3,720	5	3
Maximum Marine/Minimum Rail	F	В	1.11	0.47	4	4	8,910	3,720	5	3
Reduced Harbor Fill	F	В	1.11	0.46	4	4	8,908	3,719	3	2

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Appendix J.9 Vehicle Delay at Railroad Crossings

Vehicle Delay at Railroad Crossings Summary of Project Alternatives FISCO/Port Vision 2000 EIS/EIR Table J.9-1

Crossing Street			Gate Down Time (mi	min./day)				Vehicular Delay (hours/day)	ours/day)	
			Project Alternati	ative				Project Alternative	tive	
_	oN N					٤		anna social		
	Action	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill	Action	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min Rail	Reduced Harbor Fill
1. Cutting Boulevard	44	56	47	58	58	16.4	23.0	18.0	23.0	0 00
2. Gilman Street	46	29	49	61	61	11.4	16.3	128	16.0	6.03
3. Camelia Street	46	59	49	61	9	1.2	17	2 6	δ. α	D. 0
4. Cedar Street	46	29	49	19	19	2.2	3.2	2. 5.	. e	o 6
5. Virginia Street	46	29	49	61	19	0	5.	1.5	. r	
6. Hearst Avenue	46	29	49	61	19	3.8	5.4	4.2	9 40	
7. Addison Street	46	29	49	61	61	1.2	1.7	. E	. 6) -
8. Bancroft Way	46	- 29	49	61	61	1.2	1.7	13	2 00	. σ
9. 67th Street	26	72	99	74	74	1.7	2.5	2.0	2.6	. c
10. 66th Street	99	72	9	74	74	1.7	2.5	2.0	2.6	2.0
11. 65th Street	28	72	9	74	74	2.3	3.4	2.7	35) ir
12. Market Street	2	20	92	20	.02	4.6	4.6	4.6	4.6	4.6
13. M. L. King Blvd.	2	92	02	70	20	0.4	0.4	0.4	40	4.0
14. Clay Street	2	70	20	2	20	2.1	2.1	2.1	2.1	
15. Washington Street*	2	20	20	92	2	9.0	9.0	8.0	80	. 6
16. Broadway*	2	70	20	2	20	16.1	16.1	16.1	161	16.1
17. Franklin Street*	2	20	20	20	20	2.2	2.2	2.2	2.2	2.2
18. Webster Street	2	70	20	2	2	4.3	4.3	4.3	6.4	1 4
19. Oak Street	2	20	2	02	22	4.6	4.6	4.6	4.6	94
20. 5th Avenue	53	59	83	58	53	3.6	3.6	3.6	3.6	3.6
21. 29th Avenue	<u>თ</u>	61	19	6	19	2.2	2.2	2.2	2.2	2.2
22. Fruitvale Avenue	13	19	19	19	9	5,3	5.3	5.3	5,3	6,00
23. 37th Avenue	19	19	19	19	19	0.3	0.3	0.3	0.3	0.3
Total Delay						90.6	109.4	95.9	111.7	1117

Gate down time is reported aithough there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Note and Associates 1996

Dowling Associates 1996

1.9-1

Table J.9-2
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
No Project Alternative

		Num	ber of T	rains in l	Both Direction	s	Train Spe	ed (mph)
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
1. Cutting Boulevard	4	20	18			42	60	60
2. Gilman Street	4	20	17	4	2	47	60	60
3. Camelia Street	4	20	17	4	2	47	60	60
4. Cedar Street	4	20	17	4	2	47	60	60
5. Virginia Street	4	20	17	4	2	47	60	60
6. Hearst Avenue	4	20	17	4	2	47	60	60
7. Addison Street	4	20	17	4	2	47	60	60
8. Bancroft Way	4	20	17	4	2	47	60	60
9. 67th Street	4	20	17	4	2	47	45	45
10. 66th Street	4	20	17	4	2	47	45	45
11. 65th Street	4	20	17	4	2	47	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4	Ĺ	48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-3
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
No Project Alternative

	Ga	te Down	Time Pe	er Train (minutes)	Total Gate
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	44
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	46
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	46
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	46
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	46
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	46
7. Addison Street	0.7	0.6	1.6	0.7	0.6	46
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	46
9. 67th Street	0.8	0.7	2.0	0.8	0.6	56
10. 66th Street	0.8	0.7	2.0	0.8	0.6	56
11. 65th Street	0.8	0.7	2.0	0.8	0.6	56
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.9-4
FISCO/Port Vision 2000 EIS/EIR
Traffic Volumes at Railroad Crossings
No Project Alternative

Crossing Street	Jurisdiction	Average Daily Traffic for Year Traffic Was Counted	Year Traffic Was Counted	Average Daily Traffic (2010)
Cutting Boulevard	Richmond	26,892	1994	31,270
2. Gilman Street	Berkeley	17,413	1986	21,830
3. Camelia Street	Berkeley		1996 (Estimated Max.)	2,280
4. Cedar Street	Berkeley	3,413	1986	4,280
5. Virginia Street	Berkeley	1,584	1986	1,980
6. Hearst Avenue	Berkeley	5,758	1986	7,220
7. Addison Street	Berkeley		1996 (Estimated Max.)	2,280
8. Bancroft Way	Berkeley	٠	1996 (Estimated Max.)	2,280
9. 67th Street	Emeryville		1996 (Estimated Max.)	2,280
10. 66th Street	Emeryville		1996 (Estimated Max.)	2,280
11. 65th Street	Emeryville		1995	3,080
12. Market Street	Oakland	3,655	1996	3,920
13. M. L. King Blvd.	Oakland	309	1976	360
14. Clay Street	Oakland	1,531	1977	1,800
15. Washington Street	Oakland	613	1976	720
16. Broadway	Oakland	11,833	1978	13,800
17. Franklin Street	Oakland	1,626	1976	1,920
18. Webster Street	Oakland	3,111	1974	3,690
19. Oak Street	Oakland	3,340	1976	3,930
20. 5th Avenue	Oakland	6,224	1976	7,330
21. 29th Avenue	Oakland	9,034	1990	9,960
22. Fruitvale Avenue	Oakland	22,304	1993	24,220
23. 37th Avenue	Oakland	1,070	1994	1,160

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Note: Escalation factors were applied to escalate counts to 1996 estimated values as follows:

Cities of Richmond & Berkeley - 1% per year; City of Oakland 1/2% per year.

Table J.9-5
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
No Project Alternative

	1	Averege	Total Cata	Vahiaulaa
Crossing Street	luminaliatio	Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(2010)	(min./day)	(hours/day)
Cutting Boulevard	Richmond	31,270	44	16.4
2. Gilman Street	Berkeley	21,830	46	11.4
3. Camelia Street	Berkeley	2,280	46	1.2
4. Cedar Street	Berkeley	4,280	46	2.2
5. Virginia Street	Berkeley	1,980	46	1.0
6. Hearst Avenue	Berkeley	7,220	46	3.8
7. Addison Street	Berkeley	2,280	46	1.2
8. Bancroft Way	Berkeley	2,280	46	1.2
9. 67th Street	Emeryville	2,280	56	1.7
10. 66th Street	Emeryville	2,280	56	1.7
11. 65th Street	Emeryville	3,080	56	2.3
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996 Dowling Associates 1996

Table J.9-6
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Maximum Marine/Maximum Rail Alternative

		Nun	nber of T	rains in l	Both Direction	ıs	Train Spe	ed (mph)
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
1. Cutting Boulevard	4	20	26			50	60	60
2. Gilman Street	4	20	26	2	2	54	60	60
3. Camelia Street	4	20	26	2	2	54	60	60
4. Cedar Street	4	20	26	2	2	54	60	60
5. Virginia Street	4	20	26	2	2	54	60	60
6. Hearst Avenue	4	20	26	2	2	54	60	60
7. Addison Street	4	20	26	2	2	54	60	. 60
8. Bancroft Way	4	20	26	2	2	54	60	60
9. 67th Street	4	20	26	2	2	54	45	45
10. 66th Street	4	20	26	2	2	54	45	45
11. 65th Street	4	20	26	2	2	54	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4	· ·	20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-7
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Maximum Marine/Maximum Rail Alternative

	Ga	Gate Down Time Per Train (minutes)				
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	56
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	59
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	59
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	59
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	59
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	59
7. Addison Street	0.7	0.6	1.6	0.7	0.6	59
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	59
9. 67th Street	0.8	0.7	2.0	0.8	0.6	72
10. 66th Street	0.8	0.7	2.0	0.8	0.6	72
11. 65th Street	0.8	0.7	2.0	0.8	0.6	72
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.9-8
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Maximum Marine/Maximum Rail Alternative

		Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(2010)	(min./day)	(hours/day)
1. Cutting Boulevard	Richmond	31,270	56	23.0
2. Gilman Street	Berkeley	21,830	59	16.3
3. Camelia Street	Berkeley	2,280	59	1.7
4. Cedar Street	Berkeley	4,280	59	3.2
5. Virginia Street	Berkeley	1,980	59	1.5
6. Hearst Avenue	Berkeley	7,220	59	5.4
7. Addison Street	Berkeley	2,280	59	1.7
8. Bancroft Way	Berkeley	2,280	59	1.7
9. 67th Street	Emeryville	2,280	72	2.5
10. 66th Street	Emeryville	2,280	72	2.5
11. 65th Street	Emeryville	3,080	72	3.4
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

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Table J.9-9
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Minimum Marine/Minimum Rail Alternative

		Nun	nber of T	rains in I	Both Direction	ns	Train Spe	ed (mph)
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	20	20			44	60	60
2. Gilman Street	4	20	20	2	2	48	60	60
3. Camelia Street	4	20	20	2	2	48	60	60
4. Cedar Street	4	20	20	2	2	48	60	60
5. Virginia Street	4	20	20	2	2	48	60	60
6. Hearst Avenue	4	- 20	20	2	2	48	60	60
7. Addison Street	4	20	20	2	2	48	60	60
8. Bancroft Way	4	20	20	2	2	48	60	60
9. 67th Street	4	20	20	2	2	48	45	45
10. 66th Street	4	20	20	2	2	48	45	45
11. 65th Street	4	20	20	2	2	48	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-10
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Minimum Marine/Minimum Rail Alternative

	Ga	ite Down	Time Pe	er Train (minutes)	Total Gate
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	47
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	49
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	49
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	49
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	49
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	49
7. Addison Street	0.7	0.6	1.6	0.7	0.6	49
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	49
9. 67th Street	0.8	0.7	2.0	0.8	0.6	60
10. 66th Street	0.8	0.7	2.0	0.8	0.6	60
11. 65th Street	0.8	0.7	2.0	0.8	0.6	60
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.9-11 FISCO/Port Vision 2000 EIS/EIR Vehicle Delay at Railroad Crossings Minimum Marine/Minimum Rail Alternative

		Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(2010)	(min./day)	(hours/day)
Cutting Boulevard	Richmond	31,270	47	18.0
2. Gilman Street	Berkeley	21,830	49	12.8
3. Camelia Street	Berkeley	2,280	49	1.3
4. Cedar Street	Berkeley	4,280	49	2.5
5. Virginia Street	Berkeley	1,980	49	1.2
6. Hearst Avenue	Berkeley	7,220	49	4.2
7. Addison Street	Berkeley	2,280	49	1.3
8. Bancroft Way	Berkeley	2,280	49	1.3
9. 67th Street	Emeryville	2,280	60	2.0
10. 66th Street	Emeryville	2,280	60	2.0
11. 65th Street	Emeryville	3,080	60	2.7
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

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Table J.9-12
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Maximum Marine/Minimum Rail Alternative

		Nun	nber of T	rains in l	Both Direction	ıs	Train Spe	ed (mph)
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	20	27			51	60	60
2. Gilman Street	4	20	27	2	2	55	60	60
3. Camelia Street	4	20	27	2	2	55	60	60
4. Cedar Street	4	20	27	2	2	55	60	60
5. Virginia Street	4	20	27	2	2	55	60	60
6. Hearst Avenue	4	20	27	2	2	55	60	60
7. Addison Street	4	20	27	2	2	55	60	60
8. Bancroft Way	4	20	27	2	2	55	60	60
9. 67th Street	4	20	27	2	2	55	45	45
10. 66th Street	4	20	27	2	2	55	45	45
11. 65th Street	4	20	27	2	2	55	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-13
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Maximum Marine/Minimum Rail Alternative

	Ga	ite Down	Time Pe	er Train ((minutes)	Total Gate
Crossing Street		nger *		ght *	Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	58
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	61
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	61
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	61
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	61
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	61
7. Addison Street	0.7	0.6	1.6	0.7	0.6	61
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	61
9. 67th Street	0.8	0.7	2.0	0.8	0.6	74
10. 66th Street	0.8	0.7	2.0	0.8	0.6	74
11. 65th Street	0.8	0.7	2.0	0.8	0.6	74
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	8.0	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.9-14
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Maximum Marine/Minimum Rail Alternative

		Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(2010)	(min./day)	(hours/day)
1. Cutting Boulevard	Richmond	31,270	58	23.9
2. Gilman Street	Berkeley	21,830	61	16.9
3. Camelia Street	Berkeley	2,280	61	1.8
4. Cedar Street	Berkeley	4,280	61	3.3
5. Virginia Street	Berkeley	1,980	61	1.5
6. Hearst Avenue	Berkeley	7,220	61	5.6
7. Addison Street	Berkeley	2,280	61	1.8
8. Bancroft Way	Berkeley	2,280	61	1.8
9. 67th Street	Emeryville	2,280	74	2.6
10. 66th Street	Emeryville	2,280	74	2.6
11. 65th Street	Emeryville	3,080	74	3.5
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21, 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996 Dowling Associates 1996

Table J.9-15
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Reduced Harbor Fill Alternative

		Nun	nber of T	rains in I	Both Direction	1S	Train Spe	ed (mph)
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	20	27			51	60	60
2. Gilman Street	4	20	27	2	2	55	60	60
3. Camelia Street	4	20	27	2	2	55	60	60
4. Cedar Street	4	20	27	2	2	55	60	60
5. Virginia Street	4	20	27	2	2	55	60	60
6. Hearst Avenue	4	20	27	2	2	55	60	60
7. Addison Street	4	20	27	2	2	55	60	60
8. Bancroft Way	4	20	27	2	2	55	60	60
9. 67th Street	4	20	27	2	2	55	45	45
10. 66th Street	4	20	27	2	2	55	45	45
11. 65th Street	4	20	27	2	2	55	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-16
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Reduced Harbor Fill Alternative

	Ga	te Down	Time Pe	er Train (minutes)	Total Gate
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	58
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	61
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	61
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	61
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	61
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	61
7. Addison Street	0.7	0.6	1.6	0.7	0.6	61
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	61
9. 67th Street	0.8	0.7	2.0	0.8	0.6	74
10. 66th Street	0.8	0.7	2.0	0.8	0.6	74
11. 65th Street	0.8	0.7	2.0	0.8	0.6	74
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

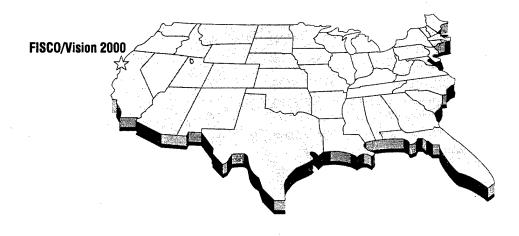
Table J.9-17 FISCO/Port Vision 2000 EIS/EIR Vehicle Delay at Railroad Crossings Reduced Harbor Fill Alternative

		Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(2010)	(min./day)	(hours/day)
Cutting Boulevard	Richmond	31,270	58	23.9
2. Gilman Street	Berkeley	21,830	61	16.9
3. Camelia Street	Berkeley	2,280	61	1.8
4. Cedar Street	Berkeley	4,280	61	3.3
5. Virginia Street	Berkeley	1,980	61	1.5
6. Hearst Avenue	Berkeley	7,220	61	5.6
7. Addison Street	Berkeley	2,280	61	1.8
8. Bancroft Way	Berkeley	2,280	61	1.8
9. 67th Street	Emeryville	2,280	74	2.6
10. 66th Street	Emeryville	2,280	74	2.6
11. 65th Street	Emeryville	3,080	74	3.5
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	. 0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

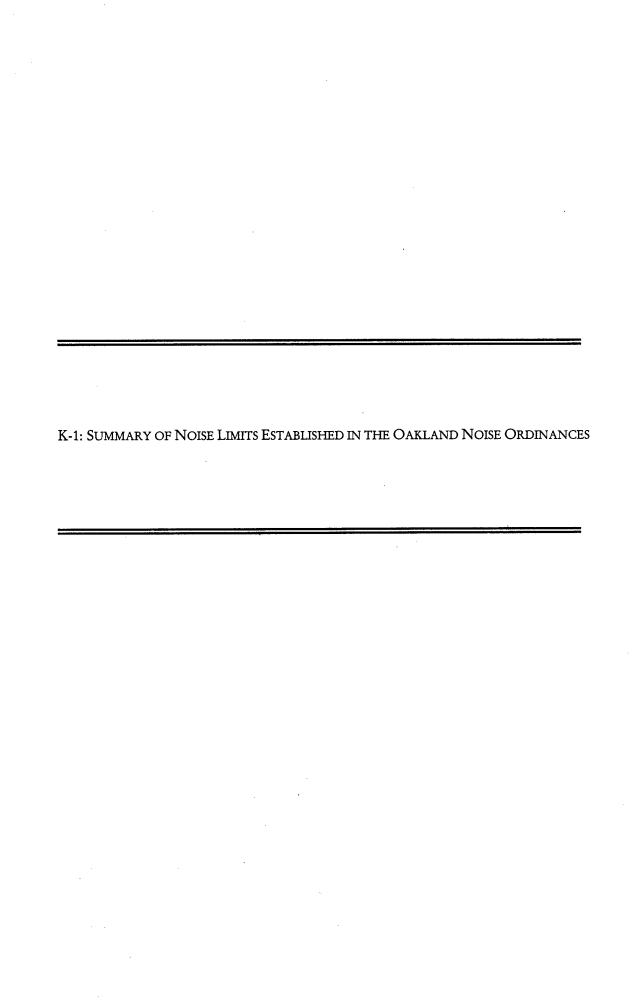
^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996 Dowling Associates 1996



APPENDIX K NOISE



Appendix K Noise

Table K-1
Summary of Noise Limits Established in the Oakland Noise Ordinances

Noise Source	Affected Properties	Time Period	Specified or Equivalent Noise Limits
Construction and demolition activities lasting less than 10 days	Residential land uses, on weekdays	7 am - 7 pm	80 dBA, maximum 65 dBA maximum; 50 dBA, 1-hr Leq
ress than 10 days	Residential land uses, on weekends and federal holidays land uses, on weekdays		65 dBA, maximum 65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial and Industrial land uses on weekdays		85 dBA, maximum 85 dBA maximum; 70 dBA, 1-hr Leq
	Commercial and Industrial land uses, on weekends and federal holidays		70 dBA, maximum 85 dBA maximum; 70 dBA, 1-hr Leq
Construction and demolition activities lasting 10 days or more	Residential land uses, on weekdays	•	65 dBA, maximum 65 dBA maximum; 50 dBA, 1-hr Leq
To days of more	Residential land uses, on weekends and federal holidays		55 dBA, maximum 65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial and industrial land uses, on weekdays		70 dBA, maximum 85 dBA maximum; 70 dBA, 1-hr Leq
	Commercial and industrial land uses, on weekends and federal holidays		60 dBA, maximum 85 dBA maximum; 70 dBA, 1-hr Leq
Residential air conditioning units installed before June 11, 1996	All properties	Any time	55 dBA, maximum
Residential air conditioning units installed after June 11, 1996	All properties	Any time	50 dBA, maximum
Enclosed commercial refrigeration units within 200 feet of residential properties	Residential land uses	10 pm - 7 am	60 dBA, maximum outside enclosure

Noise Source	Affected Properties	Time Period	Specified or Equivalent Noise Limits
Other stationary or mobile commercial refrigeration units	Residential and Civic land uses		80 dBA maximum; 65 dBA, 1-hr Leq 65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq
Enclosed commercial ventilation exhaust systems within 200 feet of residential properties	Residential land uses	10 pm - 7 am	60 dBA, maximum outside enclosure
Other commercial exhaust	Residential and Civic land	7 am - 10 pm	80 dBA maximum; 65 dBA, 1-hr Leq
ventilation systems	uses	-	65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq
Sound amplification equipment (including portable or car audio equipment) operated in any park without a permit	Parks and adjacent property	Any time	Audible at a distance of 50 feet or more from the noise source
Sound amplification equipment operated in any park under terms of a valid permit	Adjacent to park boundaries	Any time	80 dBA, maximum
Testing of stationary alarms		7 am - 7 pm	No more than 60 seconds
or other emergency signaling devices		7 pm - 7 am	
Testing of complete		7 am - 10 pm	No more than once each month
emergency response systems including signaling devices		10 pm - 7 am	Prohibited
Activated burglar and fire alarms (including car alarms)		Any time	Must be deactivated within 15 minutes
Stationary non-emergency signaling devices, bells, whistles, etc. (excluding devices at churches and schools)		Any time	No more than 10 seconds in any hour

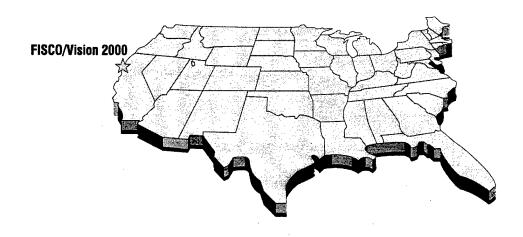
Noise Source	Affected Properties	Time Period	Specified or Equivalent Noise Limits
Loading and unloading activities	Residential land uses	9 pm - 6 am	Must not create a noise disturbance or exceed general noise limits in the Oakland Planning Code
Domestic power tools and machinery	Any land use	9 pm - 6 am	Must not create a noise disturbance or exceed general noise limits in the Oakland Planning Code
Noise sources not specifically covered by other limits (general Planning	Residential and Civic land uses	-	80 dBA maximum; 65 dBA, 1-hr Leq 65 dBA maximum; 50 dBA, 1-hr Leq
Code limits)	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq

Note: Oakland Ordinance 11894 also contains general prohibitions against excessive or annoying noise and vibration.

Federal and state law generally preempt local regulation of traffic, rail, and aircraft noise.

Source: City of Oakland Ordinances 11893, 11894, and 11895.

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APPENDIX L HAZARDOUS WASTE AND MATERIALS

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Table L-1
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
511D	511D	fuel, diesel	83.967
511D	511D	fuel, unleaded gasoline	92,463
320	321	detergents	200
511	511	cleaners deodorizers	1,377 459
123	123W	acetylene antifreeze hydraulic fluid solvents	368 1,027 108 860
123	123E	lubricants adhesives glazing compound herbicides joint compound sealers solvents	890 500 128 302 417 542 644
542	542	acetone adhesives brake fluid cement citric acid cleaners coating compounds coolant fluid corrosion prevention compd. deodorizers deoxidizer descaler detergent disinfectant fire extinguisher floor wax grease isopropyl alcohol hydraulic fluid ion exchange compound masonry surface conditioner methyl ethyl ketone	360 1,517 132 490 3,200 76,238 3,752 16,360 2,435 241 1,848 3,246 4,798 416 832 6,053 3,677 1,296 35,551 872 1,620 306

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
		oil paint polish	6,623 41,860 456
		sealers	2,239
		sodium hypochlorite	1,140
		solvents	11,876
		strippers	2,523
		sulfuric acid	187
		tetrachloroethylene	24,127
		thinners	502
		toluene	1,052
		trichloroethane	2,006
		wire rope exposed	525
310	310	Amerold OSC	200
		cleaners	1,196
		detergents	1,400
		fire extinguisher	100
		floor wax	625
		freon	390
		magnesium chloride	320
		oil	100
		paint	500
·		polish	180
		refractory mix	1,310
		sealant	250
		thinner	500
711	711	absorbents	8,440
		acetylene	10,977
		activated desiccant	2,090
		adhesives	2,232
		isopropyl alcohol	210
		ammonia	18,407
		antifreeze	39,400
		argon brake fluid	23,370
		calibration fluid	2,800 1,050
		carbon dioxide	66,833
		carbon dioxide carbon removal compd.	1,400
		caulking compd.	1,400
		cement	120
1		chlorine	159,300

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
		cleaners	38,010
1		coating compounds	3,205
1		corrosion prevention compound	1,963
		cutting fluid	1,272
		detergent	29,180
		developers	420
		disinfectants	3,552
		ethyl acetate	945
	•	fire extinguisher	1,700
		fixers	2,790
		floor wax	4,436
		freon	152,668
		grease	241,674
		helium	44,735
		hydraulic fluid	143,897
		hydrogen	156,100
		inspection penetrants	620
		insulating compounds.	20,106
		ion exchange compound	361,550
		laundry starch	1,840
		leak test/detect compound	11,623
		lubricants	495
		mercury	180
		nitrogen gas	177,920
		oils	41,600
		oxygen gas	124,091
		paint	3,540
		pesticides	1,992
		petroleum	920
		potassium carbonate	3,200
		potassium hydroxide	9,426
		propane	4,160
		sealers	950
		silicone compounds.	110
		sodium chloride	1,800
		sodium hydroxide	800
		solvents	31,760
		spackling paste	315
		strippers	4,900
		thinners	180
		1	812
· [•	titrating solutions	
		toners	1,230

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

	D. 1111	Was id Care	Maximum
Parcel No.	Building No.	Material Category	Quantity (pounds)
342	342	absorbents	606
		caulking compound	1,200
		cleaners	400
		concrete	1,840
		moisture displacer	105
		oil	450
		silicone compounds.	220
		solvents	324
		stucco mix	180
441	441 B	lubricants	156
		solvents	550
533	533	concrete	4,800
		sealers	900
		solvents	440
534	534	abrasive blasting materials	2,500
		glass traffic beads	1850
541	541	absorbents	1,000
		adhesives	4,896
		cement	13,217
		drywall compound	7,565
		grease	216
		lubricants	1,345
		oil	389
		paint	200
		roof sealing compound	1,700
		sealers	1,477
		thinners	1,044
		urethane	209
		welding rods	209
833	833	acetylene	1,460
		adhesives	100
		antifreeze	220
		cement	1,280
		cleaners	1,648
		corrosion prevention compound	440
		grease	3,780
		hydraulic fluid	14,140
		oil	24,748
		oxygen gas	2,200

Table L-1 (continued) 1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
		paint solvents thinners	454 3,064 180

pounds = pounds per year Source: US Navy 1996th

TABLE L-2. PHASES OF THE CERCLA REMEDIATION PROCESS

Phases of the CERCLA remediation process are described below.

Site Discovery (SD). A site is an area that has had or has the potential for a hazardous substance release. A single facility may contain several sites to be studied under the IRP. Occasionally, potential sites are discovered by searching through records or during construction projects.

Preliminary Assessment (PA). This assessment identifies areas of potential contamination and evaluates each area to determine if a threat to human health or the environment exists. A PA report is developed from readily available information, such as past inventory records, aerial photographs, employee interviews, existing analytical data, and an activity visit. A PA may recommend no further action, additional work under the IRP, or a removal action.

Site Inspection (SI). This inspection is conducted after the PA when additional information is needed to evaluate a site. The collection and analysis of soil, sediment, and surface and ground water samples may help to determine the need for further study. Information needed for hazard ranking also is collected. An SI may recommend a site for no action, further study, or an immediate removal action. The PA and SI are often performed concurrently.

Hazard Ranking System (HRS). This system provides a uniform method of scoring or ranking the potential risk of a site where a hazardous substance has been present. A site in this context refers to the entire FISCO complex. The EPA developed the HRS to prioritize clean-up efforts. The EPA evaluates the draft HRS packages and proposes any facility scoring 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities that are listed on the NPL receive the highest priority. FISCO is not on the NPL.

Removal Actions (RO). In the event of an immediate threat or potential threat to human health or the environment, a short-term mitigating or cleanup action may be implemented. The goal of the removal action is to isolate the contamination hot spots and their source from all biological receptors. Usually, removal actions do not completely clean up a site, and additional remediation steps are required.

Remedial Investigation (RI). This investigation is performed to more fully define the nature and extent of the contamination at a site and to evaluate possible methods of cleaning up the site. During the investigation, ground water, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of the contamination. The RI process at FISCO is typically done in two phases—Phase I, site characterization and Phase II, characterization of the constituents of concern, the migration pathways, and the potential hazards to human health and the environment.

Feasibility Study (FS). The feasibility study identifies and evaluates all applicable site cleanup alternatives. As part of the study, a risk assessment is performed to quantify the level of risk to the public and environment posed by the site. Often, the risk assessment determines which alternative is selected for final remediation. Each alternative is evaluated for effectiveness in protecting human health and the environment, ease of implementation, and overall cost. Typically, the RI and FS are performed concurrently.

Remedial Action Plans (RAP)/Record of Decision (ROD). These two documents are essentially the same. RAP is the state term while ROD is federal. The RAP/ROD documents the reasoning behind the selection of a particular cleanup alternative. A RAP/ROD is required even if the most feasible alternative is no action.

Remedial Design (RD). After the RAP/ROD is signed, the remedial design phase can begin. In the RD, specific construction parameters and/or equipment specifications are presented for the selected cleanup alternative.

Remedial Action (RA). During the remedial action phase, the selected cleanup technology is implemented. RA can be as simple as soil excavation or as complicated as a complete ground water treatment system which may operate for many years. Remedial action work plans for long-term remediations include operation and maintenance (O&M) plans. O&M efforts continue until the cleanup is complete.

Long-term Monitoring. After completion of the RA, federal, state, or local regulatory agencies may require subsequent monitoring of the site.

TABLE L-3. FISCO INSTALLATION RESTORATION PROGRAM SITES

The following is a brief discussion of the ten remedial investigation (RI) sites and the remediation areas based on the information presented in the final scoping plan (US Navy 1992b) the Final Environmental Baseline Survey (EBS) (US Navy 1996h) and the Final Base Realignment and Closure Cleanup Plan (BCP) (US Navy 1996i).

Remedial Investigation Area I

Area 1 consists of sites IRP 01 (Lot 612), IRP 03 (Building 511E), IRP 12 (former location of Building 414), IRP 13 (former location of Building 411), and IRP 14 (Buildings 511 and 511B). A brief description of each IRP site is as follows.

IRP 01: Lot 612 · Hazardous Waste Storage Lot. Lot 612 is located in the northeastern portion of FISCO and consists of three large buildings (Buildings 612, 612A, and 612C) and three small buildings (612B, 612E, and 612F) surrounded by an open area. This RI site was used by the Defense Reutilization and Marketing Office (DRMO) as a scrapyard and storage area for materials from military installations throughout the Bay Area up to 1980. Materials stored and staged at this site include hazardous wastes, such as paints, waste solvents, pesticides, halogenated and nonhalogenated solvents, thinners, corrosives, and heavy metal sludge. In addition, PCBs also may have been stored at this site. In 1981, Public Works Center (PWC) took over the site and had a private contractor remove and dispose of all on-site waste (US Navy 1992b).

As part of the SI, 14 soil borings were drilled in the vicinity of the eight wooden 20 feet by 20 feet open storage bins and the staging area location northeast of the bins, and 26 soil samples were collected. Analytical results for the soil samples indicate that petroleum hydrocarbons, such as diesel and toluene, are present in the soil at this site. In addition, some solvents, such as acetone and vinyl chloride, were detected (US Navy 1992b).

According to the remedial phase I investigation report, one surface soil samples was collected east of Building 612-B. Analytical results indicated that the concentrations for seven metals, including lead, exceeded preliminary remediation goals (PRG) for residential land uses. In addition, the arsenic concentration in this sample exceeded PRGs for industrial land uses (US Navy 1995d).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of lead and mercury-contaminated surface soil is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 03: Building 511-E - Stained Oil Areas. Building 511-E is located in the northeastern portion of FISCO and consists of a building and concrete pad, which were constructed in 1942. The building was used up to 1950 as a rigging loft for cranes. Since 1980, the area immediately surrounding Building 511-E was used for

handling materials that required redrumming or overpacking. Between 1980 and 1983, this area was used to redrum waste materials (US Navy 1992b).

Four soil borings were drilled at the site as part of the SI, and soil samples were collected. Analytical results for the soil samples indicated that petroleum hydrocarbons, volatile organic compounds (VOCs), and semivolatile compounds (SVOCs) were detected in the soil (US Navy 1992b).

According to the remedial phase I investigation report, two sludge samples were collected from a drainage sump adjacent to Building 511B. High concentrations of solvents, SVOCs, petroleum hydrocarbons and lead were reported to have been detected in these samples (US Navy 1995d).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of asphalt contaminated with lead is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 12: Former Building 414 · Transportation Maintenance Shop and Lot. IRP 12 is located in located the north central portion of FISCO and consists of building 414 a surrounding lot. The structure was constructed in the 1940s and was used for storage up to 1984. The building was later used for maintenance activities on Navy vehicles and equipment from 1984 to 1989. The building was condemned after the 1989 Loma Prieta earthquake and later demolished. Based on the PA conducted 1991, a Phase I RI was conducted at this IRP site. Currently a Phase II RI/FS is pending (US Navy 1992b; US Navy 1996i).

IRP 13: Former Building 411 - Transportation Maintenance Shop and Lot. IRP 13 is located in the northern portion of FISCO and consists of a building surrounded by an open area. The site was used up to 1989 as a maintenance area for vehicles and light equipment. The building was condemned after the 1989 Loma Prieta earthquake. Five hydraulic lifts and two waste oil underground storage tanks (USTs) (Tanks 411-1 and 411-2) were located at the site. The USTs were removed in the fall of 1992 as part of the Navy Clean Contract (US Navy 1992b; US Navy 1996i).

As part of the SI, seven soil borings were drilled at the site. Soil and ground water samples were collected, and the analytical results for the soil samples indicated that petroleum hydrocarbons, VOCs, and SVOCs were present in the soil at this site. VOCs were detect in some of the ground water samples collected from the site (US Navy 1992b).

Currently, a phase II RI/FS and field scale pilot test are to be conducted at this site (US Navy 1996i).

IRP 14: Buildings 511 & 511B - Heavy Equipment Repair. IRP 14 site is located in the northern portion of FISCO. The site consists of two buildings surrounded by

an open lot. Building 511 was used as a locomotive repair shop from 1942, when it was constructed, to 1975. This building was later used as a repair shop for heavy equipment from 1975 to 1989. Currently, this building is used to store and classify recyclable dry goods, such as paper and cardboard. Building 511-B was used up to 1989 as an automobile and small truck wash (US Navy 1992b).

Four USTs formerly were located at this site—two 12,300-gallon diesel USTs (Tanks 511F-1 and 511F-2), one 2,300-gallon gasoline UST (Tank 511F-3), and one 750-gallon waste oil UST (Tank 511-1). The USTs were removed in the fall of 1992 as part of the Navy Clean contract. Analytical results for the soil samples collected during the UST removal activities indicated that a release of petroleum hydrocarbons has occurred in the vicinity of the USTs.

Under the SI, six soil borings were drilled in the vicinity of the USTs, oil water separator, and the shop drains. Soil, ground water, and sludge samples were collected during the SI investigation. Analytical results for the soil and ground water samples indicate the presence detectable concentrations of VOCs, SVOCs, petroleum hydrocarbons, and metals (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

Remedial Investigation Area II

Area II consists of IRP 02 (former Buildings 740C and 738), IRP 15 (Lots 642, 643, and 644), and IRP 21 (Lot 645). A brief discussion of each site follows.

IRP 02: Buildings 740C and 738 - Stained Soil Areas. IRP 02 is located in the southeastern part of the FISCO and consists of two attached buildings (Buildings 740C and 738), a closed Imhoff tank and one 3,600-gallon UST (Tank 740). The western ends of the buildings were used to stage equipment, drums, and materials, which included lubricants, solvents, paints, and motor oil. The buildings were used as an auto hobby shop until they were closed in 1985 due to structural problems. Wastes from automotive repair, such as sandblasting grit, lubricants, solvents, and paints, were reportedly disposed of in an unpaved area surrounding the Imhoff tank. Tank 740 was removed in the fall of 1992 as part of the Navy Clean Contract (US Navy 1992b).

Seven soil borings were drilled and one composite surface sample was collected at the site as part of the SI. Based on the analytical results for the soil and ground water samples collected, petroleum products, VOCs, SVOCs, and metals were detected in the soil and ground water samples (US Navy 1992b).

Based upon the results of the sampling data, a phase II RI/FS was recommended at Building 740C and Building 738 to develop remedial alternatives, to delineate the extent of contamination, to determine the source of contamination and potential pathways, and to evaluate metals in the ground water (US Navy 1996i).

IRP 15: Lots 642, 643, and 644 - Petroleum Based Products and Cleaning Solvent Storage. IRP 15 is located in the southern portion of FISCO and consists of three paved lots separated by a railroad spurs. These lots were used as a drum storage area for petroleum-based products and cleaning solvents. Materials included oils, hydraulic fluids, antifreeze, and to a lesser extent, dry cleaning solvents, malathion, and insulating oils. The pavement in this area has been stained due to minor spills and leaks from drums previously stored at this site (US Navy 1992b).

A soil gas survey was conducted at this site in the fall of 1990 as part of the SI. Twenty-five sample locations were selected, and VOCs were detected in the soil gas samples collected from several of the sampling locations. An additional fourteen soil borings were drilled, and soil and ground water samples were collected. Analytical results for the soil and ground water samples indicated detectable concentrations of petroleum hydrocarbons, VOCs, and SVOCs. No inorganic analytical data for soils were available for lots 642, 643, and 644 (US Navy 1992b).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with petroleum compounds is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 21: Lot 645 - Open Storage Area. Lot 645 is located in the south central portion of FISCO. This area has been used to store large bulky ship parts, such as propellers, rudder components, and proper drive shafts. During the 1991 environmental assessment conducted at this site, field personnel noted a greenish gray sand (sand blasting grit) covering much of the surface in the western portion of the site. Based on surface soil sampling, this sand blasting grit was reported to contain elevated metal concentrations, and the soil in this area was removed under a RO in November 1994 (US Navy 1996h; US Navy 1996i).

Remedial Investigation Area III

Area 3 consists of IRP 18 (Building 534) and IRP 20 (Lot 532). A brief discussion of each site follows.

IRP 18: Building 534 - Paint Shop Accumulation Area. IRP 18 is located in the central portion of FISCO and consists of a building surrounded by a lot. This site was used for painting and sandblasting. Paint and solvents were stored in the lot adjacent to the building (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

IRP 20: Lot 532 - Former 90-Day Hazardous Waste Accumulation Area. IRP 20 is located in the central portion of FISCO and consists of an open area surrounding a shed. This site was reported to have been used as a 90-day accumulation area for hazardous waste (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

Miscellaneous IRP Sites

IRP 04: Lot 111: PCB Transformer Storage Area. IRP 04 is located in the northwestern portion of FISCO, and consists of a single building and concrete pad, which was used to store electrical equipment and some pesticides from 1942 until the 1980s. Since the 1980s, it has only been used to store new electrical transformers. Based on the analytical results from a composite soil sample collected at the site, pesticides and PCBs have been detected in the soil (US Navy 1992b).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with PCBs is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 05: Building 431 - Hazardous Materials Classification. Building 431 is located in the central portion of FISCO and has been primarily used since 1985 to classify and temporarily store hazardous materials for up to 90 days. Hazardous materials handled at this site include combustible liquids, petroleum products, corrosives, oxidizers, peroxides, calcium, sodium nitrates, and lead paints. In addition to the handling of hazardous materials, dip tanks located in the eastern portion of the building were used for various metal processing operations, such as degreasing. Prior to 1985, this site was used as a general storage area. A limited scope expanded site inspection (ESI) has been proposed in the vicinity of the dip tanks at this site (US Navy 1992b).

IRP 17: Buildings 721, 722, 723, 731, 732, and 733 - Navy Resale Warehouse Buildings. IRP 17 is located in the eastern portion of FISCO, and consists of six buildings, which are used to store large quantities of various bulk goods for distribution to Navy exchange stores. Currently this site is being investigated for radiological contamination. Once the radiological assessment is completed, and assuming no contamination is discovered, this site will be designated as a no action site (US Navy 1996i).

IRP 19: Building 710 - The Public Works Center Maintenance Area. Building 710B is located in the northeastern portion of FISCO and is used as the PWC maintenance area for the operation of the storm drain system, heavy equipment storage, and office space. Hazardous materials or wastes generally are not stored or handled at this site; however, the surface in several areas of the site is stained with oil. In addition, floating oil was occasionally observed in the sewer and an old PCB spill was cleaned up at this site in the late 1970s. A limited scope ESI was conducted and the site was recommended for RO (US Navy 1992b; US Navy 1996i).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with PCBs is scheduled to be completed in the summer of 1996 (US Navy 1996i).

Table L-4
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM	
· 1	243	Yes, Non-Friable	
1	343	Yes, Non-Friable	
1	443	Yes, Non-Friable	
1	543	Friable ACM Suspected	
1	633	Yes, Non-Friable	
1	642	ACM Not Suspected	
1	649	Yes, Non-Friable	
1	730	Yes, Non-Friable	
1	Shed 443	ACM Not Suspected	
2	741	Yes, Non-Friable	
2	742	Friable ACM Suspected	
2	746	Friable ACM Suspected	
2	<i>7</i> 50	Yes, Non-Friable	
2	754	Friable ACM Suspected	
2	<i>7</i> 55	Yes, Non-Friable	
2	834	Yes, Non-Friable	
2	841	Yes, Non-Friable	
2	842	Yes, Non-Friable	
2	844	Friable ACM Suspected	
2	845	Yes, Non-Friable	
2	846	Yes, Non-Friable	
2	848	Yes, Non-Friable	
2	850	ACM Not Suspected	
2	742A	Yes, Non-Friable	
2	841A	Friable ACM Suspected	
2	841B	Yes, Non-Friable	
2	841C	Friable ACM Suspected	
2	841G	ACM Not Suspected	
2	841H	ACM Not Suspected	
3	612	Yes, Non-Friable	
3	700	ACM Not Suspected	
3	710	Yes, Non-Friable	
3	711	Yes, Non-Friable	
3	712	Yes, Non-Friable	
3	721	Yes, Non-Friable	
3	722	Yes, Non-Friable	
3	723	Yes, Non-Friable	

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM	
3	724	Yes, Non-Friable	
3	731	Yes, Non-Friable	
3	732	Yes, Non-Friable	
3	723	Yes, Non-Friable	
3	724	Yes, Non-Friable	
3	821	Yes, Non-Friable	
3	831	Friable ACM Suspected	
3	833	Yes, Non-Friable	
3	612A	Yes, Non-Friable	
3	612B	Yes, Non-Friable	
3	612C	Yes, Non-Friable	
3	612E	Yes, Non-Friable	
3	612F	Yes, Non-Friable	
3	612H	ACM Not Suspected	
3	622A	ACM Not Suspected	
3	710A	Yes, Non-Friable	
3	710B	Yes, Non-Friable	
3	712C	Yes, Non-Friable	
3	733A	Yes, Non-Friable	
3	733B	Yes, Non-Friable	
4	111	ACM Not Suspected	
4	113	Friable ACM Suspected	
. 4	114	ACM Not Suspected	
4	116	ACM Not Suspected	
4	122	Yes, Non-Friable	
4	123	Yes, Non-Friable	
4	131	Friable ACM Suspected	
4	141	Friable ACM Suspected	
4	221	Friable ACM Suspected	
4	222	Friable ACM Suspected	
4	223	Friable ACM Suspected	
4	320	Friable ACM Suspected	
4	321	Yes, Non-Friable	
4	322	Friable ACM Suspected	
4	323	ACM Not Suspected	
4	324	ACM Not Suspected	
4	325	ACM Not Suspected	
4	331	Yes, Non-Friable	

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM	
4	332	Friable ACM Suspected	
4	333	Yes, Non-Friable	
4	341	Yes, Non-Friable	
4	342	Yes, Non-Friable	
4	421	Friable ACM Suspected	
4	422	Yes, Non-Friable	
4	431	Yes, Non-Friable	
4	432	Yes, Non-Friable	
4	433	Yes, Non-Friable	
4	441	Yes, Non-Friable	
4	442	Yes, Non-Friable	
4	521	Friable ACM Suspected	
4	522	Friable ACM Suspected	
4	531	Yes, Non-Friable	
4	532	Yes, Non-Friable	
4	533	Yes, Non-Friable	
4	534	ACM Not Suspected	
4	541	Yes, Non-Friable	
4	542	ACM Not Suspected	
4	112E	ACM Not Suspected	
4	122A	Yes, Non-Friable	
4	342A	Yes, Non-Friable	
4	441A	Yes, Non-Friable	
4	441B	Yes, Non-Friable	
4	522A	Yes, Non-Friable	
4	532B	Yes, Non-Friable	
4	533B	ACM Not Suspected	
4	211	Yes, Non-Friable	
4	212	Yes, Non-Friable	
4	213	Yes, Non-Friable	
4	310	Friable ACM Suspected	
4	311	Friable ACM Suspected	
4	312	Friable ACM Suspected	
4	313	Friable ACM Suspected	
4	405	Yes, Non-Friable	
4	410	Yes, Non-Friable	
4	412	Friable ACM Suspected	
4	413	Yes, Non-Friable	

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building ACM		
4	500	Yes, Non-Friable	
4	501	Yes, Non-Friable	
4	502	Friable ACM Suspected	
4	503	Yes, Non-Friable	
4	504	Yes, Non-Friable	
4	511	Friable ACM Suspected	
4	512	Yes, Non-Friable	
4	513	Yes, Non-Friable	
4	311A	Yes, Non-Friable	
4	412A	Yes, Non-Friable	
4	505A	ACM Not Suspected	
4	505B	ACM Not Suspected	
4	511B	Yes, Non-Friable	
4	511D	Yes, Non-Friable	
4	511E	Yes, Non-Friable	

Table L-5 FISCO Phase I RI Characterization Report Summary of Sampling Activities Area 1

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Soil Gas	28	03/06/94- 03/08/94	Geoprobe	On Site	VOC
Surface Soil	1	03/05/94	Disposable Trowel	Off Site	VOC, SVOC, TRPH, Metals
Subsurface Soil	34	03/17/94- 03/19/94	Geoprobe	On Site	Headspace VOCs(field screening)
Subsurface Soil	22	03/28/94- 03/29/94	Geoprobe	Off Site	VOCs SVOC, TRPH, TOC, Metals
Subsurface Soil	36	06/16/94- 06/21/94	Hollow Stem Auger	Off Site	VOC, SVOC, TRPH, TOC ¹ , Metals ² , TCLP ³ , Physical Parameter ^s
Groundwater	5	04/07/94- 04/08/94 (temporary wells)	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, TRPH, Metals (total and dissolved)
Groundwater	9	06/26/94- 06/30/94	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, Metals (assorted), TRPH

¹TOC analysis was performed on 12 soil samples

VOC = Volatile organic compounds

SVOC = Semivolatile organic compounds

TRPH = Total recoverable petroleum hydrocarbon

²Metals analysis included CLP analysis plus mercury

³TCLP analysis was performed on five soil samples

⁴Physical parameters testing was performed on eight samples and included density, porosity, grain size analysis, total organic carbon, and pH.

Table L-6 FISCO Phase I RI Characterization Report Summary of Sampling Activities Area 2

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Subsurface Soil	12	03/11/94- 03/12/94	Geoprobe	On Site	VOC Headspace
Subsurface Soil	27	03/14/94- 03/15/94	Geoprobe	Off Site	VOC, SVOC, TRPH, Metals
Subsurface Soil	27	06/13/94- 06/15/94	Hollow Stem Auger	On Site	VOC, SVOC, TRPH, TOC ¹ , Metals ² , TCLP ³ , Physical Parameter ^s
Groundwater	12	06/23/94 06/24/94 06/28/94	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, TRPH, Metals (dissolved)

¹TOC analysis was performed on six soil samples

VOC = Volatile organic compounds

SVOC = Semivolatile organic compounds

TRPH = Total recoverable petroleum hydrocarbon

²Metals analysis included CLP analysis plus mercury

³TCLP analysis was performed on five soil samples

⁴Physical parameters testing was performed on seven samples and included density, porosity, grain size analysis, total organic carbon, and pH.

Table L-7 FISCO Phase I RI Characterization Report Summary of Sampling Activities Basewide Investigation

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Subsurface Soil	27	03/16/94 03/17/94 03/19/94	Geoprobe	Off Site	CLP Metals
Subsurface Soil	29	03/31/94- 04/05/94	Hollow Stem Auger	Off Site	CLP Metals ¹ , TCLP ²
Groundwater	14	04/13/94- 04/20/94	Bailer/ Peristaltic Pump	Off Site	Metals³, TPH, TDS

¹Metals analysis included mercury

²TCLP analysis was performed on six soil samples

³ Metals analysis on groundwater included total and dissolved

CLP = Contact Laboratory Program

TCLP = Toxicity characteristic leaching procedure

TPH = Total petroleum hydrocarbon

TDS = Total dissolved solids

Table L-8 FISCO Phase I RI Characterization Report Monitoring Well Construction Data Area 1

Well	Date	Well Depth	Screened	Aquifer	Elevation	Elevation
Number	Drilled ¹	(ft bgs)	Interval	Monitored	(ft above MLLW) ²	(ft above MLLW) ²
			(ft bgs)		Top of Casing	Ground Surface
A1-	06/20/94	12.0	3.0-11.8	Shallow	15.51	13.54
MW01						
A1-	06/16/94	13.0	3.0-12.8	Shallow	15.23	13.46
MW02				61 11	10.10	42.25
A1-	06/16/94	13.0	3.0-13.0	Shallow	13.18	13.35
MW03				01 11	42.22	12.45
A1-	06/16/94	11.0	3.0-11.0	Shallow	13.23	13.45
MW04				01 11	42.04	11.20
A1-	06/16/94	12.0	3.0-11.8	Shallow	13.96	14.26
MW05	21/11/01		2 2 4 4 2	C1 11	15 42	13.50
A1-	06/16/94	12.0	3.0-11.8	Shallow	15.42	15.50
MW06	04/00/04	12.0	20110	Shallow	15.77	13.76
A1-	06/20/94	12.0	3.0-11.8	Snallow	15.//	15.76
MW07	06/20/94	15.0	3.0-14.8	Shallow	13.51	13.97
A1- MW08	06/20/94	15.0	3.0-14.6	Silatiow	15.51	15.77
A1-	06/21/94	12.0	3.0-11.8	Shallow	15.32	13.34
MW09	06/21/94	12.0	J.0-11.8	Jilailow	15.52	13.51
A1-	06/20/94	13.0	3.0-12.8	Shallow	15.38	13.39
MW10	00, 20, 71	13.0	3.0 12.0			
A1-	06/21/94	13.0	3.0-12.8	Shallow	14.67	12.75
MW11						
A1-	06/20/94	13.0	3.0-12.8	Shallow	14.80	12.90
MW12						
			Temp	orary Wells		
A1-	04/01/94	12.8	3.8-12.8	Shallow	14.96	13.65
MW02T						
A1-	03/29/94	11.7	1.7-11.7	Shallow	14.57	13.39
MW04T						
A1-	03/29/94	8.2	3.2-8.2	Shallow	15.60	13.41
MW06T						
A1-	03/29/94	12.7	2.7-12.7	Shallow	16.56	13.44
MW08T						
A1-	03/29/94	7.2	4.7-7.2	Shallow	15.97	13.18
MW09T						10.05
A1-	04/01/94	10.2	0.5-10.2	Shallow	16.47	13.05
MW11T				<u> </u>		

¹All Area 2 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

Table L-9
FISCO Phase I RI Characterization Report
Monitoring Well Construction Data
Area 2

r						
Well	Date	Well Depth	Screened	Aquifer	Elevation	Elevation
Number	Drilled ¹	(ft bgs)	Interval	Monitored	(ft above MLLW) ²	(ft above MLLW) ²
			(ft bgs)		Top of Casing	Ground Surface
A2- MW01	06/15/94	8.3	3.0-8.1	Shallow	11.75	12.10
A2- MW02	06/15/94	15.0	5.0-14.8	Shallow	11.51	11.78
A2- MW03	06/15/94	13.0	3.0-13.0	Shallow	9.58	10.14
A2- MW04	06/14/94	13.0	3.0-13.0	Shallow	14.63	12.56
A2- MW05	06/14/94	13.0	3.0-13.0	Shallow	14.41	12.43
A2- MW06	06/15/94	9.5	3.0-9.3	Shallow	12.89	10.83
A2- MW07	06/13/94	11.6	3.0-10.8	Shallow	9.66	9.95
A2- MW08	06/13/94	8.5	3.0-8.5	Shallow	14.90	12.92
A2- MW09	06/15/94	10.0	3.0-9.8	Shallow	13.78	11.74

¹All Area 2 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

Table L-10 FISCO Phase I RI Characterization Report Monitoring Well Construction Data Area 2

Well Number	Date Drilled ¹	Well Depth (ft bgs)	Screened Interval (ft bgs)	Aquifer Monitored	Elevation (ft above MLLW) ² Top of Casing	Elevation (ft above MLLW) ² Ground Surface
A3- MW01	09/19/94	10.0	4.0-10.0	Shallow	NA³	12.77
A3- MW02	09/19/94	17.0	12.0-17.0	Shallow	NA	11.95
A3- MW03	09/19/94	19.0	14.0-19.0	Shallow	NA	11.95
A3- MW04	09/20/94	8.0	3.0-8.0	Shallow	NA	12.99
A3- MW05	09/20/94	10.0	4.0-10.0	Shallow	NA	13.80
A3- MW06	09/20/94	8.0	3.0-8.0	Shallow	NA	12.51
A3- MW07	09/20/94	9.0	4.0-9.0	Shallow	NA	12.35
A3- MW08	09/20/94	10.0	4.0-10.0	Shallow	NA	13.50

¹All Area 3 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

³NA - not available

Table L-11 Groundwater Elevations UST Sites 211, 331N, 331S, 331E, 332, 334, 511D, 750, 842, and 845

		Screened	Well Head			
Well ID	Total Depth	Interval	Elev	Date	DTW	WL Elev
	(btoc)	(btoc)	(toc-msl)	Measured	(btoc)	(msl)
UST Site 211			***************************************			
211-MW1	14.2	4.0-13.0	13.43	1/24/95	4.84	8.59
211-MW2	14.8	4.5-13.5	12.85	1/24/95	4.16	8.69
211-MW3	14.8	3.5-12.5	13.09	1/24/95	4.25	8.84
UST Site 331N	J					· L
331N-MW1	14.3	4.0-14.0	112.00	8/17/95	4.59	107.41
				8/30/95	4.00	108.00
331N-MW2	14.5	4.0-14.5	111.47	8/17/95	4.16	107.31
				8/30/95	3.50	107.97
331N-MW3	14.6	4.1-14.1	111.82	8/17/95	4.32	107.50
				8/30/95	3.62	108.20
331N-HMW1	17.9	unknown	111.61	8/30/95	3.71	107.90
UST Site 331S						
331S-MW1	13.6	3.6-12.6	12.54	1/25/95	4.40	8.14
				8/18/95	4.50	8.04
331S-MW2	13.8	3.5-12.5	12.22	1/25/95	5.22	7.00
				8/18/95	5.65	6.57
331S-MW3	13.6	3.5-12.5	12.39	1/25/95	3.41	8.98
				8/18/95	3.17	9.22
UST Site 331E	•					
331E-MW1	14.0	3.5-12.5	12.49	1/26/95	4.48	8.01
	<u> </u>			8/18/95	4.48	8.01
331E-MW2	14.6	3.5-12.5	12.60	1/26/95	4.62	7.98
				8/18/95	5.05	7.55
331E-MW3	14.2	3.5-12.5	12.62	1/26/95	5.00	7.62
				8/18/95	5.41	7.21
UST Site 332						
332-MW1	13.6	3.5-12.5	12.05	1/24/95	6.67	5.38
332-MW2	13.5	3.5-12.5	12.08	1/25/95	5.65	6.43
332-MW3	13.8	3.5-12.5	12.04	1/25/95	6.13	5.91
UST Site 334						
334-MW1	15.0	4.5-14.5	112.22	8/18/95	7.14	105.08
				8/31/95	7.19	105.03
334-MW2	14.3	3.8-13.8	111.68	8/18/95	7.41	104.27
				8/31/95	6.80	104.88
334-MW3	20.0	4.5-19.5	111.70	8/18/95	7.25	104.45
				8/31/95	6.74	104.96

Table L-11 (continued)
Groundwater Elevations
UST Sites 211, 331N, 331S, 331E, 332, 334, 511D, 750, 842, and 845

		Screened	Well Head			
Well ID	Total Depth	Interval	Elev	Date	DTW	WL Elev
	(btoc)	(btoc)	(toc-msl)	Measured	(btoc)	(msl)
UST Site 511	D					
511D-MW1	14.8	3.5-12.5	13.95	1/20/95	4.21	9.74
511D-MW2	15.0	3.5-12.5	12.49	1/20/95	3.11	9.38
511D-MW3	14.5	3.5-12.5	13.17	1/20/95	4.00	9.17
UST Site 750						
750-MW1	14.5	3.8-13.8	12.28	8/2/96	6.24	6.04
750-MW2	13.3	2.8-12.8	12.28	8/2/96	6.21	6.07
750-MW3	14.5	4.5-14.5	12.43	8/2/96	6.50	5.93
UST Site 842						
842-MW1	13.2	2.9-12.9	13.09	1/20/95	3.11	9.98
				3/30/95	3.24	9.85
842-MW2	13.1	2.8-12.8	14.15	1/20/95	4.91	9.24
				3/30/95	5.00	9.15
842-MW3	13.6	3.4-13.4	12.69	1/20/95	3.17	9.52
				3/30/95	3.92	8.77
UST Site 845						
845-MW1	14.0	3.8-13.8	14.14	1/23/95	3.90	10.24
				3/30/95	4.06	10.08
845-MW2	14.2	4.0-14.0	13.93	1/23/95	3.94	9.99
				3/30/95	3.88	10.05
845-MW3	13.5	3.3-13.3	14.31	1/23/95	4.19	10.12
				3/30/95	4.39	9.92

NOTES:

All measurements in feet.

KEY:

btoc - Below top of casing

toc = Top of casing

msl - Above mean sea level

DTW = Depth to water

WL = Water level

Source: ERM West Inc. 1996

Table L-12 FISCO Phase I RI Characterization Report Monitoring Well Construction Data Basewide Wells

Well	Date	Well Depth	Screened	Aquifer	Elevation	Elevation
Number	Drilled ¹	(ft bgs)	Interval	Monitored	(ft above MLLW) ²	(ft above MLLW) ²
		` ",	(ft bgs)		Top of Casing	Ground Surface
BW-	04/13/94	11.5	1.5-11.5	Shallow	15.93	13.77
MW01						
BW-	04/13/94	12.0	4.0-12.0	Shallow	15.01	13.05
MW02						
BW-	04/01/94	9.4	4.5-9.5	Shallow	15.10	13.35
MW02						
BW-	04/01/94	8.9	3.0-9.0	Shallow	15.31	13.35
MW04						
BW-	04/01/94	9.0	3.0-9.0	Shallow	14.10	12.15
MW05		,				
BW-	04/01/94	18.1	3.3-18.3	Shallow	11.54	11.99
MW06						
BW-	04/04/94	12.3	3.0-12.5	Shallow	14.43	12.47
MW07						
BW-	04/04/94	8.2	3.0-8.0	Shallow	15.37	13.16
MW08						
BW-	04/05/94	9.8	3.0-10.0	Shallow	13.81	12.09
MW09						
BW-	04/07/94	13.4	3.0-14.0	Shallow	14.48	12.68
MW10						
BW-	04/08/94	19.8	14.8-19.5	Deep	15.69	13.77
MW11						
BW-	04/08/94	25.4	15.0-25.0	Deep	14.70	12.70
MW12	04/11/94					
BW-	04/12/94	28.7	18.0-28.5	Deep	14.10	12.67
MW13	01/10/01				45.00	
BW-	04/12/94	24.8	14.5-24.5	Deep	15.38	13.37
MW14	04/40/07	25.0	45.0.55.5		45.25	40.11
BW-	04/13/94	25.9	15.0-25.0	Deep	15.35	13.44
MW15 ³						

¹All Area 2 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

³Monitoring well BW-BW15 was destroyed in June 1994

Table L-13
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	ТҮРЕ	SAMPLED	RESULTS
Building 310 Pen	C.O01	Liquid	4-18-93	8 ppm
Building 310 Pen	C.O02	Liquid	4-18-93	2 ppm
Building 310 Pen	C.O03	Liquid	4-18-93	9 ppm
Building 633	COS-148S01	Liquid	4-07-93	<1 ppm
Building 633	COS-148S01	Liquid	4-07-93	<1 ppm
Building 633	COS-148S03	Liquid	4-07-93	<1 ppm
Substation A	K6461229-304	Liquid	4-18-93	<1 ppm
Substation A	K6461229-305	Liquid	4-18-93	<1 ppm
Substation A	K6461229-301	Liquid	4-18-93	<1 ppm
Substation A	0159A7818-1	Liquid	4-18-93	<1 ppm
Building 123	75B3610	Dry	N/A	N/A
Building 141	A5373	Dry	N/A	N/A
Building 310	37401-001	Dry	N/A	N/A
Building 321	PQD-0282	Liquid	4-18-93	<1 ppm
Building 411	PRJ-0871	Liquid	4-18-93	<1 ppm
Building 422	G81E14475	Dry	N/A	N/A
Building 504	PVD-0313	Liquid	4-18-93	<1 ppm
Building 522	D6661-588	Dry	N/A	N/A
Building 542	PSA-0041	Liquid	4-21-93	<1 ppm
Lot 754	79A283052	Liquid	4-14-93	<1 ppm
Lot 754	83A170192	Liquid	4-14-93	<1 ppm
P-17A & B	83VLO37001	Liquid	4-18-93	<1 ppm
P-17A & B	83VLO37002	Liquid	4-18-93	<1 ppm
P-17A & B	83VLO37003	Liquid	4-18-93	<1 ppm
P-18A & B	83A020104	Liquid	4-18-93	<1 ppm
P-18A & B	83A020105	Liquid	4-18-93	<1 ppm
P-18A & B	83A020107	Liquid	4-18-93	<1 ppm
P-20D	85A123271	Liquid	4-18-93	<1 ppm
P-20D	85A130696	Liquid	4-18-93	<1 ppm
P-29A & B	83A020101	Liquid	4-18-93	<1 ppm
P-29A & B	83A020102	Liquid	4-18-93	<1 ppm
P-29A & B	83A020106	Liquid	4-18-93	<1 ppm
P-33	83A032145	Liquid	4-18-93	<1 ppm

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	ТҮРЕ	SAMPLED	RESULTS
P-33	83A032147	Liquid	4-18-93	<1 ppm
P-33	83A032149	Liquid	4-18-93	<1 ppm
P-46	83VLO36001	Liquid	4-18-93	<1 ppm
P-46	83VLO36002	Liquid	4-18-93	<1 ppm
P-46	83VLO36003	Liquid	4-18-93	<1 ppm
P-52	IZO6-481	Liquid	5-05-93	<1 ppm
P-52	IZO6482	Liquid	5-05-93	<1 ppm
P-52	IZO6483	Liquid	4-18-93	<1 ppm
P-69A	82A521676	Liquid	4-18-93	<1 ppm
P-69A	82A521674	Liquid	4-18-93	<1 ppm
P-69A	82A521675	Liquid	4-18-93	<1 ppm
P-7	LZ41584K74	Liquid	4-18-93	<1 ppm
P-84	86NLO11073	Liquid	4-18-93	<1 ppm
PIER 5s	01759-1	Dry	N/A	N/A
Removed B-754	886001169	Liquid	4-14-93	<1 ppm
Building 310 Pen	751-1981	Liquid	4-18-93	9 ppm
Building 844	X62-51221	Dry	N/A	N/A
Building 842	876011266	Liquid	4-22-93	<1 ppm
R. R. Weigh	83JB884024	Liquid	4-28-93	<1 ppm
Building 750	POE-0225	Liquid	4-21-93	<1 ppm
Building 141	14270-1	Liquid	4-22-93	11 ppm
Jst 534	R876011327	Liquid	4-22-93	<1 ppm
Building 312	886001434	Liquid	4-18-93	<1 ppm
Building 312	886001433	Liquid	4-18-93	<1 ppm
Building 310	886001491	Liquid	4-18-93	<1 ppm
Building 310 Pen	V89585	Dry	N/A	N/A
Building 642	83JA870088	Liquid	4-21-93	<1 ppm
Building 441A	83JA867089	Liquid	4-28-93	<1 ppm
Building 541	X228-51221	Dry	N/A	N/A
Building 533	43969	Dry	N/A	N/A
Building 532	43968-3	Dry	N/A	N/A
Building 531	43965-1	Dry	N/A	N/A
Building 441A	83JB875033	Liquid	4-13-93	<1 ppm

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	TYPE	SAMPLED	RESULTS
Building 712N	51221-2	Dry	N/A	N/A
Building 442	43967-1	Dry	N/A	N/A
Building 441	43967-2	Dry	N/A	N/A
Building 141	43965-2	Dry	N/A	N/A
Building 141	43968-1	Dry	N/A	N/A
Building 243	43965-3	Dry	N/A	N/A
Building 344	43966-4	Dry	N/A	N/A
Building 343	43968-4	Dry	N/A	N/A
Building 544	43966-1	Dry	N/A	N/A
Building 443	43966-3	Dry	N/A	N/A
Building 333	43968-2	Dry	N/A	N/A
Building 433	43966-2	Dry	N/A	N/A
Building 221	B-4513	Dry	N/A	N/A
Building 222	B-4510	Dry	N/A	N/A
Building 122	B-3672	Dry	N/A	N/A
Building 754	PQD-0285	Liquid	4-19-93	<1 ppm
N.M. PKL	PQD-0310	Liquid	4-19-93	<1 ppm
Building 122	B-3673	Dry	N/A	N/A
Building 113	PQC-0255	Liquid	3-31-93	<1 ppm
Building 113	PQC-0256	Liquid	3-31-93	<1 ppm
Building 213	B-3677	Dry	N/A	N/A
Building 320	PQB-0154	Liquid	4-18-93	<1 ppm
Building 211	PQD-0326	Liquid	4-18-93	<1 ppm
Building 311	57-10112	Liquid	4-18-93	<1 ppm
Building 311	PQJ-0857	Liquid	4-18-93	<1 ppm
Building 410	84JM331190	Liquid	4-18-93	<1 ppm
Building 502	PQD-0324	Liquid	4-18-93	<1 ppm
Building 505	PQD-0266	Liquid	4-18-93	<1 ppm
Building 511	B-3700	Dry	N/A	N/A
Building 311	B-3528	Dry	N/A	N/A
Building 311	B-3581	Dry	N/A	N/A
Building 312	PQC-0169	Liquid	4-27-93	<1 ppm
Building 311	B-3533	Dry	N/A	N/A

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	ТҮРЕ	SAMPLED	RESULTS
Building 311	B-3532	Dry	N/A	N/A
Building 513	B-3678	Dry	N/A	N/A
Building 521	PQC-0257	R-Temp	4-22-93	<1 ppm
Building 413	B-3434	Dry	N/A	N/A
Building 412	B-3524	Dry	N/A	N/A
Building 313	B-3523	Dry	N/A	N/A
Building 313	B-3527	Dry	N/A	N/A
Building 422	PML-1194	Liquid	4-22-93	<1 ppm
Building 112	UNK (x-467)	Liquid	4-07-93	<1 ppm
Building 212	B-3676	Dry	N/A	N/A
Building 322	PQD-0323	Liquid	4-18-93	<1 ppm
Building 331	B-3525	Dry	N/A	N/A
Building 131	PQB-0160	Liquid	4-22-93	<1 ppm
Building 131	PQB-0144	Liquid	3-30-93	<1 ppm
Building 131	PQD-0301	Liquid	4-22-93	<1 ppm
Building 332	B-4476	Dry	N/A	N/A
Building 421	B-3517	Dry	N/A	N/A
Building 421	B-3699	Dry	N/A	N/A
Building 431	B-3433	Dry	N/A	N/A
Building 522	B-3436	Dry	N/A	N/A
Building 612	B-4514	Dry	N/A	N/A
Building 633	83A040026	Liquid	4-07-93	<1 ppm
Building 633	83A040027	Liquid	4-07-93	<1 ppm
Building 633	83A040028	Liquid	4-07-93	<1 ppm
Building 223	X290040	R-Temp	4-19-93	<1 ppm
Berth B-1	X290039	Liquid	4-18-93	<1 ppm
N.M. PKL	X290048	R-Temp	4-18-93	<1 ppm

Table L-14 Summary of FISCO Radiological Materials Handling

Lease Area	Parcel	Records Indicate Storage	Interviews or V/P Inspection Suggests Staging or Other Interim Use	RCS Status
1	444	X		Building demolished. RASO has determined that no follow-up radiological survey work is warranted at the site.
1	742	X		RCS completed, no evidence of release identified.
2	841	X		US NRC released the area for unrestricted use based on the results of a confirmatory survey. RASO has determined that an additional RCS is not necessary.
3	733	х		RCS completed, no evidence of release identified.
3	831	x		RCS pending removal of radiological materials.
4	113	X		RCS underway.
4	331		х	No RCS planned, no storage areas have been identified.
4	332	X	X	RCS underway.
4	333		х	No RCS planned, no storage areas have been identified.
4	341		Х	No RCS planned, no storage areas have been identified.

Table L-14 (continued)
Summary of FISCO Radiological Materials Handling

Lease Area	Parcel	Records Indicate Storage	Interviews or V/P Inspection Suggests Staging or Other Interim Use	RCS Status
4	421	X		RCS underway.
4	433		Х	No RCS planned, no storage areas have been identified.
4	521		Х	No RCS planned, no storage areas have been identified.
5	211	X		RCS underway.
5	212	X		RCS underway.
5	310	Х		RCS underway.
5	312	Х		RCS underway.
5	313	X		RCS underway.
5	412	X		RCS underway.

Table L-15 FISCO Ordnance Summary

Lease Area	Parcel	Ordnance Material or Operations	
2	742	Special weapons shop operations.	
4	113	Small arms ammunition storage, indoor firing range.	
4	332	Staging of ordnance for shipment.	
5	212	Demobilized bombs and missile casings.	
5	310	Ammunition and explosives storage.	
5	412	Ammunition storage magazine.	

Table L-16 Oakland Army Base PCB/Transformers

BRAC Parcel	Building	Transformers	Serial Number	Comments (PCB Sampling Data)						
1	MH 18	2	87-512698	Sampling data not available						
			N5088	Sampling data not available						
2	161	1	87-51269B	Removed 1988						
3	H3	1	8639	Sampling data not available						
	PP6002	3	*	Sampling data not available						
	141	2	87-105-02	Sampling data not available						
	148		86-50907-B	Sampling data not available						
4				None present						
5	PP3406	1	*	Sampling data not available						
6	905	1	87-51159	Sampling data not available						
7				None present						
8				None present						
9	1	2	90527-1	Sampling data not available						
			W208092	Sampling data not available						
	6	1	8600791-1	Sampling data not available						
10	PP2700	3	GE718605566K	1.1 ppm						
			GE718606566K	1.3 ppm						
			GE719683566K	7.5 ppm						
11	808	3	*	12 ppm						
	812	2	6902416	13 ppm						
			6902382	18 ppm						
12	806	3	*	17 ppm						
				22 ppm						
				15 ppm						
13	PP3814	3	*	12 ppm						
	PP2104	3	*	13 ppm						
14			6485279	18 ppm						
14	DD4444			None present						
15	PP1116	1	*	34 ppm						
16	PP1002 PP4001	$\begin{bmatrix} 1 \\ 1 \end{bmatrix}$	6895231	Sampling data not available						
17		1	*							
1/	PP1011	3	7092857	570 ppm						
			7092859	840 ppm						
18	762		7092861	810 ppm						
10	762	4	68A8719	35 ppm						
			69AL15915	<1 ppm						
			88A063738	3 ppm						
19	PP1003	1	69AJ1209	<1 ppm						
1/	780	1 3	84-5-21	12 ppm						
	700	3	90A213663	Sampling data not available for						
			90A220722	remaining equipment in Study Area						
	793	1	90A220723							
	1,73	1	88-1-29616							

Table L-16 (continued) Oakland Army Base PCB/Transformers

20	740	1	81]0419202	Sampling data not available
21	PP5105	2	*, 12814352	2.5 ppm
21	PP5202	1	*	13 ppm
22	PP5613	1	G575341-65K	28 ppm
	660	1	H317921-70-P	Sampling data not available
23	640	1	73296	66 ppm Scheduled for removal
	640	2	73296	<1 ppm
	(New Installs)			
			87-51269A	<1 ppm
24	PP5202	1	*	7.9 ppm
	647	1	6897774	250 ppm
	PP5302			
25	590	2	756772	110 ppm
			X63210	Dry
26	None Present			

^{*} Serial number is unreadable for data source.

Note: Some data gaps in the PCB inventory and past removal, retrofill, and remediation response actions are anticipated for Oakland Army Base

Table L-17 Oakland Army Base Asbestos

BRAC	Facility	Square	Year	Asbestos Containing Material
Parcel	Number	Feet	Constructed	Information
2	161	79,152	1942	P7 Transit Shed - vinyl floor tiles in northwest offices on first floor, woven paper/tape on duct system over
				northwest offices
7	916	1,218	1942	AIS Office - vinyl floor tiles throughout building
8	991	3,476	1942	RR Engine Ship - cementitious siding on exterior walls was not sampled but assumed to contain asbestos
9	1	161,983	1942	Office Headquarters - vinyl floor tiles throughout building, pipe covering behind walls, perimeter hard wall plaster. Cementitious exhaust pipe in janitor's closet on first floor of Wing 2 not sampled, but assumed to contain asbestos
9	4	4,600	1942	POV - vinyl 9" x 9" floor tiles throughout building
9	6	16,128	1966	Communication/ADP - vinyl 9" x 9" floor tiles throughout building, acoustical tiles in Room 7A, pipe covering above ceiling in mechanical room
10	60	13,256	1942	Cafeteria - vinyl flooring throughout building, pipe covering and mudded joint packages on attic hot water lines
10	70	6,715	1952	Military Police - vinyl 9" x 9" and 1' x1' floor tiles throughout building
10	85	9,597	1941	Print Plant - vinyl floor tiles throughout building
10	88	11,134	1919	Storage/Forms - vinyl floor tiles, raw asbestos material, pipe covering, linoleum
10	90	10,556	1941	AV Safety Mort vinyl 9" x 9" floor tiles throughout building, linoleum at entrance to projector room
10	99	29,624	1918	AAFES Warehouse - vinyl floor tiles throughout building
11	808	235,040	1942	Warehouse 808 - vinyl floor tiles in the office are on the mezzanine
11	812	18,345	1944	Vehicle Maintenance Shop - mudded joint packings and woven paper/tape on breaching in mechanical room, mudded joint packings along north wall between offices, pipe coverings in upstairs storeroom, vinyl floor tiles in offices and locker room. Cementitious siding in room off main office, room at east end of ship and along perimeter walls, and cementitious pipe at west end of building were not sampled but assumed to contain asbestos.
11	821	20,000	1943	Storage - roofing material. Cementitious piping above heaters in east half of building were not sampled but assumed too contain asbestos

Table L-17 (continued) Oakland Army Base Asbestos

11	823	20,000	1942	Box and Crate Shop - nonfriable materials assumed
**	023	20,000	1712	asbestos containing were cementitious siding and
				piping on west side of men's restroom
12	806	233,640	1942	MOTBA Warehouse 806 - vinyl floor tiles at north
12	000	255,010	17.12	side of offices at east end of building
12	807	233,640	1942	MOTBA Warehouse 807 - vinyl floor tiles in north
1-	00,	200,010		side offices. Cementitious pipe off all space heaters
		1		and throughout two east wings of building were not
				sampled but assumed to contain asbestos.
13	804	233,640	1941	Warehouse 804 - vinyl floor tiles in mortuary office.
		'		Non-friable asbestos includes cementitious panels
		1		behind east office gas heater, cementitious pipe in
				northwest corner, and fire doors throughout building
13	805	233,640	1942	Warehouse 805 - vinyl floor tiles in office along west
				wall, northwest corner women's restroom.
				Cementitious piping along north and west sides were
				not sampled but assumed to contain asbestos
14	802	233,640	1941	Warehouse 802 - vinyl floor tiles in women's
				restroom, southwest corner of Bay 5, northwest
				corner of office, and employees break room.
				Cementitious piping in officer and fire doors were
				not sampled but assumed to contain asbestos
14	803	233,640	1941	AAFES Warehouse - vinyl floor tiles in women's
				restroom, southwest corner of Bay 5, northwest
				corner of office, and employee break room.
		1		Cementitious piping in offices and fire doors were
16	020	2.401	1957	not sampled but assumed to contain asbestos. Autocraft Shop- pipe covering and mudded joint
16	830	2,401	1937	packings on domestic water and exhaust lines along
				north wall
16	833	6,052	1942	AFGE Union Hall - vinyl floor tiles on main level.
10	633	0,032	1742	Cementitious siding on exterior of building was not
				sampled but assumed to contain asbestos
16	834	1,209	1981	Motor Pool Dispatch - vinyl floor tiles throughout
10	054	1,20	1701	building
17	840	4,912	1951	Paint Shop - Cemetitious piping in paint shop and
	0.0	'','		cementitious siding around restroom were not
				sampled but assumed to contain asbestos
18	762	13,638	1965	Dispensary - vinyl floor tiles throughout the building
19	780	39,818	1955	Barracks - vinyl floor tiles throughout the building
19	796	45,951	1951	PWC Building - boiler/tank insulation, pipe covering
			. =	with associated mudded joint packings, wrapped
				cardboard/paper pipe covering and associated
				mudded joint packings, vinyl floor tiles in first floor
				janitor's room, Room 305, and annex

Table L-17 (continued) Oakland Army Base Asbestos

20	701	2.70(1042	
20	<i>7</i> 01	3,796	1942	Chapel - acoustical/thermal insulation on first, second, and third pillars along south wall
20	726	14,175	1957	Community Center Library - vinyl tiles throughout
	/20	11,175	1,5,	building, pipe covering and associated mudded joint
				packings
20	738	7,225	1967	Craft Shop - vinyl floor tiles, hard wall plaster,
20	/30	,,225	1707	acoustical tile, wrapped cardboard/paper pipe
		1		covering, mudded joint packings
20	740	12,053	1968	Bowling Center - vinyl floor tiles in spectator seating
20	/40	12,055	1700	area, between lanes, in the office, and in the
				concession area
22	650	35,044	1966	Guest House Hotel - vinyl floor tiles throughout the
		55,011	1700	building, mudded joint packings associated with
				nonsuspect pipe covering on water lines
22	660	10,508	1971	Theater - vinyl floor tiles throughout the building,
1		10,500	1//1	mudded joint packings associated with pipe coverings
		1		in mechanical room, breaching insulation in
				mechanical room
23	640	332,844	1945	AAFES Warehouse - vinyl floor tiles throughout
1 -3		332,011	27 13	building, pipe covering and mudded joint packings,
				corrugated pipe covering on water lines of women's
		W 197		restroom of executive office
23	641	17,772	1942	Package Store, etc vinyl floor tiles at south and
				west ends of building
24	645	2,778	1942	Officers Family Housing - vinyl floor tiles in
				southeast end of break room
24	646	15,000	1942	Storage Family Housing - 1' x 1' and 9" x 9" vinyl
				floor tiles in abandoned offices at southwest corner
24	647	8,800	1942	Child Development and Chapel Annex - vinyl floor
				tiles throughout the building
24	690	12,586	1956	BEQ HQ Detach - vinyl floor tiles throughout
				building, wrapped cardboard/paper pipe covering
		·		and associated mudded joint packings on steam lines
				in first floor bathroom
25	590	363,543	1944	AAFES Warehouse - vinyl floor tiles throughout
				parts of the building, pipe coverings and associated
				mudded joint packings on steam system outside
	İ			boiler room, mudded joint packings associated with
		We also see		dairy cooler supply lines, tank insulation and mudded
				joint packings on abandoned hot water system

Table L-18
Oakland Army Base Oil/Water Separators

Oil/Water Separators	Location	Current Status of Use
OWS 1	Building 991, Railroad Roundhouse	Out of service
OWS 2	Building 812	Service 1302nd heavy duty vehicles
OWS 3	North side of POV lot	Clean POVs moved by the 1302nd
OWS 4	Building 99	Service AAFES vehicles
OWS 5	Building 828	Out of service
OWS 6	Building 832	Service garrison vehicles
OWS 7	Building 830	Service garrison POVs
OWS 8	Building 843	Out of service
OWS 9	Building 843	Out of service

Table L-19 Oakland Army Base Aboveground Storage Tanks

BRAC Parcel	Location (Building)	Year Installed	Capacity (gallons)	Tank Material	Substance Stored	Use/Status
4	SW corner of POV loading dock	Not known	550	Not known	Unleaded gas	Active
8	NW of Building 991	Not known	10,000	Steel	Diesel	Active; replaces old UST
10	Building 99	Not known	Not known	Not known	Waste oil	Removed
16	North of Building 830	Not known	550	Not known	Waste oil	Active
16	West of Building 844	1994	10,000	Steel	Diesel	Active; replaces old UST
19	East of Building 780	Not known	550	Not known	Diesel	Active

Table L-20 Oakland Army Base Underground Storage Tanks

	T	Т					1			
Future	TACTIONS	•	1	1		2	2	2	2	2
Regulatory	Status	-	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1994	Removed 1990	Removed 1990
Use/Status			Fueled Building 1 backup generator. Replaced by new Tank 1.	Fueled Building 6 backup generator. Replaced by new Tank 2.	Fuel source for Building 161 (Wharf 7)	Fuel source for base motor pool. Replaced by new tank 3.	Fuel source for base motor pool. Replaced by new tank 4.	Fuel source for base locomotive. Replaced by new tank 5.	Serviced Building 812 wash rack.	Serviced Building 812 wash rack. Replaced by new Tank 6.
Substance	Stored Table	ge Lalins	Fuel oil	Diesel	Fuel oil	Gasoline	Gasoline	Diesel	Waste oil	Waste oil
Tank	Material	round Stora	Bare steel	Bare steel	Bare steel	Bare steel	Bare steel	Not known	Bare steel	Bare steel
Capacity	(gailons)	Original Underground Storage Lanns	1,000	550	250	10,000	10,000	10,000	550	550
Year	Installed	SILO	1942	1966	1942	1957	1957	1982	Not	1981
Location	(Building)		Building 1	Between Buildings 1 and 6	North of Building 161	East of Building 833	East of Building 833	Northwest of Building 991	Northeast of Building 812	Northeast of Building 812
BRAC	Parcel		6	6	2	16	16	&	11	11
Tank	Numper		Tank 1 (old)	Tank 2 (old)	Tank 3 (old)	Tank 4 (old)	Tank 5 (old)	Tank 6 (old)	Tank 7	Tank 8 (old)

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

3	8	4	4	4	1	2	-	_	
Removed 1994	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1992
Fuel source for base motor pool.	Fuel source for base motor pool. Replaced by new Tank 7.	Used Building 828 gas station. Replaced by new Tank 8.	Used Building 828 gas station. Replaced by new Tank 9.	Used Building 828 gas station. Replaced by new Tank 10.	Used Building 828 gas station. Replaced by new Tank 11.	Building 590 fuel source	Building 780 fuel source	Building 793 fuel source	Used at Building 830 Auto Craft Shop
Gasoline	Diesel	Gasoline	Gasoline	Gasoline	Waste oil	Fuel oil	Fuel oil	Fuel oil	Waste oil
Fiberglass	Not known	Bare steel	Bare steel	Bare steel	Bare steel	Bare steel	Bare steel	Bare steel	Not known
2,000	10,000	5,000	5,000	5,000	550	12,500	000'9	8,000	500
1981	1981	1969	1969	1969	1969	1944	1955	1954	1957
Near Building 807	West of Building 844	West of Building 828	West of Building 828	West of Building 828	South of Building 828	South of Building 590	South of Building 780	East of Building 793	Southeast of Building 830
12	16	16	16	16	16	25	19	19	16
Tank 9 (old)	Tank 10 (old)	Tank 11 (old)	Tank 12 (old)	Tank 13 (old)	Tank 14 (old)	Tank 15 (old)	Tank 16 (old)	Tank 17 (old)	Tank 18 (old)

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

				7	2	2		2	7	0	5				o	9		9	
Active	Active	Active		Removed 1990	Removed 1990	Removed	1990	Removed	Demond	Kemoved	Removed	1990		-	Kemoved	Removed		Removed	
Collected waste liquid from Building 5 floor drain. Renumbered to Tank 12.	Renumbered to Tank 13.	Renumbered to Tank 14.		Served Building 823.	Served Building	Served Building	.66	Served Buildings	7.20 allu 7.30.	Served Buildings 780 and 772.	Served Building	701 (Chapel).			Served Building 726.	Served Building	734.	Served Building	737.
Waste liquid	Diesel	Waste oil	ge Tanks	Fuel oil	Gasoline	Gasoline		Fuel oil	7.1	Not known	Not	known;	fuel oil	suspecien	Not known	Not	known	Not	known
Fiberglass	Fiberglass	Fiberglass	Removed Underground Storage Tanks	Bare steel	Bare steel	Bare steel		Bare steel		Not known	Not	known;	fuel oil	suspected	Not known	Not	known	Not	known
200	2,000	550	oved Underg	1,000	1,000	1,000		1,000	000	1,000	200				200	1,000	`	1,000	
1982	1986	1986	Remo	Not	Not	Not	known	Not	Known	Not known	Not	known			Not	Not	known	Not	known
North of Building 5	Northeast of Building 6	North of Building 14		Northwest of	West of Building 99	West of Building 99	•	Northeast of	Building / 26	Near Buildings 780	North of Building	701			Building 726	Building 734	0	Building 737	
6	6	4		11	10	10		20		19	20				70	20 (2)		21	
Tank 19 (old)	Tank 20 (old)	Tank 21 (old)		Tank A	Tank B	Tank C	(plo)	Tank D	(plo)	Tank E	Tank F	(plo)			Tank G	Tank H	(old)	Tank I	(old)

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

9)	9		9		2	_	1		5	-			5	•			2					-		·		<u></u>	- 12	
Removed		Removed		Removed		Removed	1990	Removed		Removed	1994	-		Removed	1994			Removed	1990		Active					Active			
Served Building	660 (Theater).	Served Building	645.	Served Building	.069	Served Building	805.	Served Building	835.	Served Buildings	991. Decommis-	sioned and filled	with sand in 1982.	Served Buildings	991. Decommis-	sioned and filled	with sand in 1982.	Served Building	99.		Fuel source for	Building 1 backup	generator.	Replaced by old	Tank 1.	rce for	Building 6 backup	generator.	Replaced by old Tank 2.
Not					known	Gasoline		Waste oil	\exists	Diesel				Diesel		<u> </u>		Gasoline		orage Tanks	Diesel	-		<u> </u>		Diesel F	<u></u>		<u>~ </u>
Not	known	Not	MIIOWII	Not	known	Bare steel		Not	known									Bare steel		New (Permitted) Underground Storage Tanks	Fiberglass					Fiberglass			
Not	known	200		2,500		1,000		200		7,500				2,000				1,000		mitted) Und	1,000					550			
Not	known	Not		Not .	known	1968		1957		1956				1956				1956		New (Per	1990					1990			
Building 66	: ·	Building 645	p.::14:	069 guining	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	East of Building 805	: : :	Building 835	11. 4	Near Building 991				Near Building 991				West of Building 99		:	Suilding 1					Between Buildings			
22	,	47	2,4	1.7	,	51	ì	9I	0	· •	,	-		∞				0			۲					6			
Tank J	(old)	l ank n (old)	Tank I	T willy T	T (Old)	l ank M	T T T	lank in (old)	Took	1 all k C	(pro)		F	lank P	(DIO)		- F	1 ank Q	(prior)	F	Lank 1				F	l ank 2			

Oakland Army Base Underground Storage Tanks Table L-20 (continued)

		೯	7	٤.	Not known	Not known	7
Active	Active	Removed 1994	Active	Removed 1994	Active	Active	Active
Fuel source for Building 834 motor pool. Replaced by old Tank 4.	Fuel source for Building 834 motor pool. Replaced by old Tank 5.	Served Building 991. In 1990, replaced old Tank 6. In 1994 replaced with an AST.	Serves Building 812. Replaced old Tank 8. Scheduled for removal.	Served AAFES. In 1990, replaced old Tank 10. In 1994, replaced with an AST.	Serves Building 828. Replaced old Tank 11.	Serves Building 828. Replaced old Tank 12.	Serves Building 828. Replaced old Tank 13.
Unleaded gasoline	Unleaded gasoline	Diesel	Waste oil	Diesel	Unleaded gasoline	Unleaded gasoline	Unleaded gasoline
Fiberglass	Fiberglass	Not known	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass
10,000	10,000	10,000	550	10,000	6,000	6,000	6,000
1990	1990	1982	1990	1986	1990	1990	1990
East of Building 832	East of Building 832	Northwest of Building 991	Southwest of Building 812	In motor pool area near Building 844	West of Building 828	West of Building 828	West of Building 828
16	16	∞	11	16	16	16	16
Tank 3	Tank 4	Tank 5	Tank 6	Tank 7	Tank 8	Tank 9	Tank 10

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

East	East of Building 828 Northwest of	1990	550	Fiberglass Fiberglass	Waste oil Waste	Waste oil Replaced old Tank Active 14. Waste Received liquid Inactiv	Active Inactive	7
Building 5					liquid	waste from Building 5 floor drain. Not in use. Renumbered from Tank 19.		
Northeast of 1986 Building 6	198	9	2,000	2,000 Fiberglass	Diesel	Fuel source for Building 5 backup	Active	7
						Renumbered from Tank 20.		
North of Building 1986	198	9	200	Fiberglass	Waste oil	Serves Building 4 wash rack.	Active	7
						Renumbered from Tank 21.		·

* Identified as Number 12 in UST Monitoring Plan, Number 13 on UST permit.

Future Actions:

1 = Petitioned for closure

2 = Baseline risk assessment

3 = Status unclear

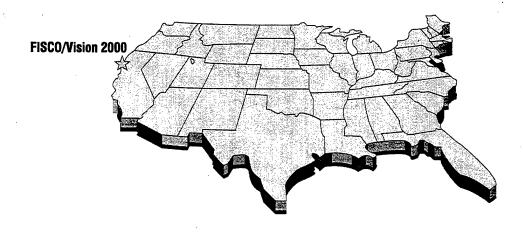
4 = Groundwater monitoring and closure

5 = Additional investigation

6 = Initial site characterization

7 = Removal

Source: US Army Corps of Engineers 1996



APPENDIX M AIR QUALITY MODELING

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Appendix M Air Quality Modeling

M.1. Introduction

Technical discussion of air pollution issues requires an understanding of terms that have a technical meaning. It is especially important to understand the distinction between air pollutant emissions and ambient air quality. The term "pollutant emissions" refers to the amount (usually stated as a weight) of one or more specific compounds introduced into the atmosphere by a source or group of sources.

In practice, most pollutant emissions data are presented as "emission rates": the amount of pollutants emitted during a specified increment of time or during a specified increment of emission source activity. Typical measurement units for emission rates on a time basis include pounds per hour, pounds per day, or tons per year. Typical measurement units for emission rates on a source activity basis include pounds per thousand gallons of fuel burned, pounds per ton of material processed, and grams per vehicle mile of travel.

The term "ambient air quality" refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions. The ambient air quality levels actually measured at a particular location are determined by the interactions among three groups of factors:

- emissions: the types, amounts, and locations of pollutants emitted into the atmosphere;
- meteorology: the physical processes affecting the distribution, dilution, and removal of these pollutants; and
- chemistry: any chemical reactions that transform pollutant emissions into other chemical substances.

Ambient air quality data are generally reported as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million by volume).

Air pollutants are often characterized as being "primary" or "secondary" pollutants. Primary pollutants are those emitted directly into the atmosphere (such as carbon monoxide, sulfur dioxide, lead particulates, and hydrogen sulfide). Secondary pollutants are those (such as ozone, nitrogen dioxide, and sulfate particles) formed through chemical reactions in the atmosphere; these chemical reactions usually involve primary pollutants, normal constituents of the atmosphere, and other secondary pollutants.

Those compounds which react to form secondary pollutants are often referred to as reactive pollutants, pollutant precursors, or precursor emission products. Some air pollutants (such as many organic gases and suspended particulate matter) are a combination of primary and secondary pollutants.

The distinction between primary and secondary pollutants is more than a matter of semantics; important air quality management implications are also involved. The ambient concentration of primary pollutants depends on the spatial concentration of the emission sources, the rate of pollutant emissions, and the degree to which the emitted pollutants are dispersed or removed from the atmosphere between the emission source and the location of interest.

Air quality problems involving primary pollutants (such as carbon monoxide) can usually be traced to a single pollutant source or a concentrated group of sources emitting large quantities of the pollutant. Additionally, the responsible emission source will usually be relatively close to the location of the air quality problem. The distance between the emission source and the location of a ground-level air quality problem depends largely on the height at which the emissions are released into the atmosphere.

When an air quality problem involves a secondary pollutant (such as ozone), the spatial relationship between emission sources and ambient air quality problems becomes much more complicated. Because secondary pollutants are not emitted directly into the atmosphere, observed ambient concentrations may not show a clear correlation with the spatial distribution of sources emitting the pollutant precursors. The time factor involved in the chemical reactions producing secondary pollutants allows emissions from numerous sources to become dispersed and mixed together. As a result, the observed ambient pollutant concentrations are due as much to the cumulative areawide emissions of precursors as to the spatial concentration of emission sources.

Two types of air quality analyses have been used in this EIS/EIR to quantify potential air quality impacts: dispersion modeling analyses to evaluate potential carbon monoxide concentrations, and emissions estimates to evaluate the significance of other pollutant emissions from vehicle traffic, locomotives, and cargo ships. Dispersion modeling and emission estimates for vehicle traffic both depend on the use of vehicle emission rates derived from the EMFAC7F vehicle emission rate model. However, emission rates for use in a dispersion modeling analysis are generated using different assumptions than those used for estimating regional emission quantities.

Emission rates for dispersion modeling analyses represent point estimates of vehicle operating conditions, while those used for ozone precursor evaluations reflect

cumulative patterns of vehicle conditions over an entire trip. The following sections discuss the specific procedures used for the dispersion modeling and ozone precursor analyses.

M.2. Carbon Monoxide Dispersion Modeling Procedures

Predicting the ambient air quality impacts of pollutant emissions requires consideration of the transport, dispersion, chemical transformation, and removal processes which affect pollutant emissions after their release from a source. Gaussian dispersion models are frequently used for such analyses. The term "gaussian dispersion" refers to a general type of mathematical equation used to describe the horizontal and vertical distribution of pollutants downwind from an emission source.

Gaussian dispersion models treat pollutant emissions as being carried downwind in a defined plume, subject to horizontal and vertical mixing with the surrounding atmosphere. The plume spreads horizontally and vertically with a reduction in pollutant concentrations as it travels downwind. Mixing with the surrounding atmosphere is greatest at the edge of the plume, resulting in lower pollutant concentrations outward (horizontally and vertically) from the center of the plume. This decrease in concentration outward from the center of the plume is treated as following a gaussian ("normal") statistical distribution. Horizontal and vertical mixing generally occur at different rates. Because turbulent motions in the atmosphere occur on a variety of spatial and time scales, vertical and horizontal mixing also vary with distance downwind from the emission source.

Dispersion models calculate pollutant concentrations at particular locations ("receptors" in modeling jargon) by applying appropriate horizontal and vertical dispersion factor equations to the initial pollutant concentration. The proper dispersion factor equations are determined from the spatial position of the receptor relative to the emission source location and the centerline of the pollutant plume extending downwind from the emission source.

When more than one emission source affects a particular receptor location, the total pollutant concentration at the receptor is the sum to the individual pollutant increments contributed by each emission source.

The reference to "pollution plumes" implies an analogy to physically mixing fluids (air in this case) with different pollutant concentrations. That would seem to suggest that the pollution concentration at a given location would be the average, not the sum, of the incremental concentrations from each overlapping plume. Despite the use of "pollution plume" terminology, the fluid mixing analogy is inappropriate in the context of atmospheric dispersion models.

The flaw in the fluid mixing analogy involves the total volume of fluid present as additional emission source contributions are added. The volume of "carrier fluid" (air) at a receptor point remains constant regardless of the number of overlapping pollution plumes affecting the site.

The faulty fluid mixing analogy can be visualized as pouring buckets of water with different salt concentrations into an empty swimming pool. The resulting pollutant (salt) concentration is the weighted average of the concentrations in the incremental

additions of salty water. The actual situation with atmospheric dispersion modeling is more like pouring different sized jars of salt into a swimming pool already filled with water. The resulting pollutant (salt) concentration is the sum of the effects of the incremental additions of salt.

In more technical terms, atmospheric dispersion models operate by simulating the spatial distribution of pollutant molecules, rather than simulating the mixing of fluids per se. The pollution plume terminology that leads to confusion is, however, too thoroughly ingrained in the modeling literature to change.

Dispersion modeling analyses for this EIS/EIR used the CALINE4 dispersion model and vehicle emission rates derived from the California Air Resources Board's EMFAC7F vehicle emission rate model.

M.2.1. The CALINE4 Model

CALINE4 (Benson, 1989) is a gaussian dispersion model developed by the California Department of Transportation to evaluate ambient air quality conditions near highways. Modeled highway links are analyzed in the model as a sequence of short segments. Each segment of a highway link is treated as a separate emission source producing a plume of pollutants which disperses downwind. Pollutant concentrations at any specific location are calculated as the total contribution from overlapping pollution plumes originating from the sequence of roadway segments.

The CALINE4 model employs a "mixing cell" approach to estimating pollutant concentrations over the roadway itself. Vertical dispersion of pollutants above the roadway is assumed to be dominated by mechanical turbulence from moving vehicles and convective mixing due to the temperature of vehicle exhaust gases. In this situation, the vertical limit of mixing (i.e., the height of the mixing cell) becomes a function of pollutant residence time within the mixing cell. Residence time depends on mixing cell width, wind angle relative to the mixing cell, and wind speed. The width of the mixing cell over each roadway segment is based on the width of the traffic lanes of the highway plus an additional vehicle-induced turbulence zone on either side. Parking lanes and roadway shoulders are not counted as traffic lanes.

The CALINE4 model computes an initial vertical dispersion parameter to characterize the vertical profile of pollutant concentrations over the roadway. Pollutant concentrations downwind from the mixing cell are then calculated using horizontal and vertical dispersion rates which are a function of various meteorological and ground surface conditions.

When winds are essentially parallel to a highway link, pollution plumes from all roadway segments overlap. This produces high concentrations near the roadway (near the center of the overlapping pollution plumes), and low concentrations well away from the highway (at the edges of the overlapping pollution plumes). When winds are at an angle to the highway link, pollution plumes from distant roadway segments make essentially no contribution to the pollution concentration observed at a receptor location. Under such cross-wind situations, pollutant concentrations near the highway are lower than under parallel wind conditions (fewer overlapping plume contributions), while pollutant concentrations away from the highway may be greater than would occur with parallel winds (near the center of at least some pollution plumes).

The CALINE4 model was originally released in 1984. Minor program revisions were made in 1988 and 1989. One of the program revisions made in 1989 introduced an altitude-based air pressure correction factor into the equation that converts air quality units from micrograms per cubic meter to parts per million by volume. By definition, such unit conversions should be done for 25 degrees Celsius and 1 atmosphere pressure (for proper comparison to federal and state ambient air quality standards). Actual ambient monitoring data must be corrected for temperature and pressure effects of actual ambient temperature and pressure. But the reverse procedure of adjusting modeling results to study area ambient temperature and air pressure should not be used.

The CALINE4 source code used for this EIS/EIR was reprogrammed to ignore study area altitude and air temperature, and to perform the correct unit conversion calculations. The CALINE4 source code was also modified to increase the number of roadway links and receptors that could be modeled in a single run, and to generate a summary table with the total carbon monoxide concentration at each receptor under each meteorological scenario.

All CALINE4 modeling conducted for this EIS/EIR used the model in the standard link run mode. Excess idling emissions at congested intersections were addressed through a simple emission rate adjustment procedure (Sculley 1989). The intersection link option in CALINE4 was not used.

M.2.1.1. Roadway and Traffic Conditions

The highway network modeled for this EIS/EIR included:

- I-80 from the Bay Bridge through the 80/580/880 distribution structure;
- I-580 between I-80 and I-980;
- I-880 from east of I-980 to I-80;
- I-980 from I-880 to I-580;
- Maritime Street;
- 7th Street and the 7th Street extension to Maritime Street;
- Middle Harbor Road;
- West Grand Avenue from Peralta Street to I-80;
- the new frontage road east of I-880, south of West Grand Avenue; and
- short sections of Adeline Street and Union Street at the ramps to I-880.

Roadway coordinates were scaled from available highway maps. Most roadways were modeled as multiple link segments to reflect changes in roadway alignment and traffic volumes. The overall roadway network was modeled as a system of 51 roadway links.

Surface streets were modeled as at-grade roadways. Most of the freeway links were modeled as bridge links, with relative elevations ranging from 5 feet to 60 feet (CH2M Hill 1990). Most mixing zone widths were based on a 5-foot turbulence zone on each side of the roadway, 12-foot lane widths for surface streets, and 15-foot lane widths (to account for center median widths) for the freeways.

Modeled traffic volumes were based on 2010 afternoon peak hour conditions for the No Action Alternative and the Maximum Marine/Maximum Rail, Minimum Marine/Minimum Rail, Maximum Marine/Minimum Rail, and Reduced Fill reuse alternatives. Modeled roadways were treated in a non-directional manner; traffic volumes and speeds in both directions were assigned to a single link. Surface street and freeway volumes were taken from link volume tables generated during traffic modeling studies conducted by Dowling Associates.

Table M-1 summarizes the roadway network used for the CALINE4 modeling analysis.

M.2.1.2. Receptor Locations

Carbon monoxide concentrations were calculated for 26 receptor locations to cover five roadway intersections and six park sites (as part of the 4(f) evaluation). Four receptors were used around each of the five intersections: Maritime Street and Burma Road; Maritime Street and 7th Street Extension; 7th Street and I-880; Adeline Street and 3rd Street; and Adeline Street and I-880. The modeled park site locations included: Port View Park, Middle Harbor Park, Ernie Raimondi Field, Willow Mini Park, Bertha Port Playground, and Chester Street Playground.

Intersection receptor coordinates represent locations 65 feet from the centerlines of the adjacent roadways, except at Maritime Street and Burma Road where a 75-foot distance was used. Receptor coordinates were calculated from roadway link coordinates using a coordinate geometry spreadsheet. All receptor heights were set at five feet.

Table M-2 presents the receptor coordinates used for the CALINE4 modeling.

M.2.1.3. Meteorological and Surface Roughness

All CALINE4 runs assumed a wind speed of 1.0 meters per second (2.2 mph), stable atmospheric conditions (stability class E and a horizontal wind direction fluctuation parameter of 10 degrees), and a mixing height limit of 50 meters (164 feet). Wind directions were varied in 10 degree increments to identify the situation producing the highest total pollutant concentration at each receptor location.

The CALINE4 model was run using an averaging time of 60 minutes and a surface roughness factor of 75 centimeters. No settling or deposition velocities were used. A scale factor of 0.3048 was used to convert link and receptor coordinate units from feet to meters.

M.2.1.4. Background Concentrations

Background pollutant concentrations represent the increment of pollution levels contributed by emission sources that are not included directly in the modeling analysis. The major contributors to background carbon monoxide levels are unmodeled surface streets and parking lots. A peak hour background concentration of 4 ppm was manually added to the modeling results for each receptor location.

M.2.1.5. 8-Hour Average Carbon Monoxide Concentrations

Potential 8-hour average carbon monoxide levels were estimated by applying a persistence factor of 79% to the maximum 1-hour carbon monoxide levels (modeled increment plus background) for each receptor location. This persistence factor was derived from the ratio of peak 8-hour versus peak 1-hour carbon monoxide concentrations reported from the Alice Street monitoring station in recent years.

M.2.2. Vehicle Emission Rates

The EMFAC7F vehicle emission rate program (California Air Resources Board 1992, 1993, 1993a, 1993b) was used to estimate carbon monoxide emission rates for vehicles operating on roadways in the study area. EMFAC7F determines vehicle emission rates based on a wide range of factors: pollutants of interest; calendar year; air temperature; mix of vehicle types; average route speed; age distribution of vehicles by type; average annual mileage accumulations by vehicle age and type; basic exhaust emission rates for new vehicles by vehicle type and model year; deterioration rates for exhaust emissions by vehicle type and accumulated mileage; and the effectiveness of vehicle inspection and maintenance programs.

EMFAC7F is designed primarily for use in generating regional and statewide emission inventories rather than roadway segment emission rates used for dispersion models. In addition, the model is structured to use default values for most input parameters. Consequently, standardized EMFAC7F output files provided by the California Air Resources Board (CARB) were placed into a spreadsheet model that performs appropriate unit conversions and composite weightings while allowing the user to vary key parameters of interest. Lookup table data in the spreadsheet version of EMFAC7F are based on 5 mph speed increments and 10 degree temperature increments. Key input data and assumptions used for the dispersion modeling analysis are discussed below.

M.2.2.1. Calendar Years

Average vehicle emission rates depend on the types and condition of vehicles operating in the area of concern. State and federal motor vehicle emission control programs are resulting in a continuing reduction in average emission rates for most types of vehicles. Average emission rates will change in the future as vehicles manufactured without sophisticated emission control systems are replaced by newer vehicles with more extensive emission control systems. Air quality analyses involving highway traffic conditions must therefore reflect vehicle emission rates for an appropriate calendar year.

The EMFAC7F program includes emission rates for calendar years from 1980 to 2020. Emission rates used for this analysis were for 2010.

M.2.2.2. Air Temperature

Vehicle emission rates for carbon monoxide vary with ambient air temperature, generally being higher at lower temperatures. Carbon monoxide problems are primarily a winter phenomenon, and tend to occur most often in the late afternoon and evening hours. A typical winter season late afternoon air temperature of 50 degrees Fahrenheit was used for all emission rates.

M.2.2.3. Vehicle Mixes

The EMFAC7F model contains emission rate data for several categories of vehicles, with distinctions based primarily on vehicle weight and fuel type. Different vehicle mixes were used for surface streets and freeways included in the dispersion modeling analysis. The vehicle mixes were generated by a spreadsheet model that adjusts regional vehicle registration data for alternative heavy truck fractions.

Because the modeled surface streets are important truck routes, the surface street vehicle mix was 52.67% autos, 16.71% light trucks/vans, 1.70% medium trucks/vans, 2.56% gasoline-fueled heavy trucks, 25.62% diesel-fueled heavy trucks, and 0.74% motorcycles. The freeway vehicle mix was 64.26% autos, 20.39% light trucks/vans, 2.08% medium trucks/vans, 2.58% gasoline-fueled heavy trucks, 9.79% diesel-fueled heavy trucks, and 0.90% motorcycles. The spreadsheet version of EMFAC7F uses CARB default factors to split the light and medium duty vehicle types into catalyst-equipped, noncatalyst, and diesel-fueled subtypes.

M.2.2.4. Vehicle Operating Modes

The EMFAC7F program recognizes three operating mode conditions for gasoline-fueled passenger vehicles. These operating modes (cold start, hot start, and hot stabilized) are a function of four factors: how long a vehicle's engine has been on; how long the vehicle was parked before the engine was started; the operating mode condition of the vehicle at the time it was previously parked; and whether the vehicle has a catalytic converter. Vehicles operating in a cold start mode have significantly higher emission rates than those operating in hot start or hot stabilized modes.

Vehicle operating mode definitions reflect the conditions of standardized test procedures used to certify that new vehicles meet applicable federal and state emission standards. By definition, the hot stabilized mode represents all vehicle operations occurring after the engine has been on for 505 seconds. The first 505 seconds of vehicle operation will be in either a cold start or a hot start mode. Cold start and hot start operating modes are distinguished by three factors: the operating mode condition of the vehicle when parked; the duration of parking preceding vehicle start-up; and the presence or absence of a catalytic converter.

Vehicles with a catalytic converter will resume operations in a cold start mode after the engine has been off for 1 hour or more. Vehicles without a catalytic converter resume operations in a cold start mode after the engine has been off for 4 hours or more. Any vehicle which is still in a cold start mode when parked will resume operations in a cold start mode regardless of the parking duration.

If a catalyst-equippedvehicle is parked for less than 1 hour, it will resume operations in a hot start mode (unless the vehicle was still in a cold start mode when it parked). If a noncatalyst vehicle is parked for a period of less than 4 hours, it will resume operations in a hot start mode.

Parking duration patterns vary by trip purpose. Work trips often begin in a cold start mode and end with a long parking duration. Shopping trips are more likely to begin in a hot start mode and end with a short or intermediate parking duration. Typical cold start and hot start patterns by trip type have been developed by the

California Department of Transportation (Caltrans) using data from statewide travel pattern surveys (California Department of Transportation 1981).

Vehicle emission rates used in a dispersion modeling analysis should reflect a point estimate of the fraction of vehicles operating in start mode conditions along various roadway segments. This can be calculated by estimating two components of the traffic flow for relevant roadway segments: the mix of trip purposes for the time period being modeled, and the fraction of vehicles that will have been in operation for more than 8.4 minutes (505 seconds). The Caltrans start mode fractions can then be applied to derive cold start and hot start fractions.

A simple spreadsheet model was used perform the operating mode calculations for surface street and freeway traffic. Table M-3 shows the operating mode calculations for surface street traffic, and Table M-4 shows the calculations for freeway traffic. EMFAC7F emission rates were calculated using the weighted average operating mode fractions.

M.2.2.5. Vehicle Speeds

Emission rates used in the dispersion modeling analysis were calculated for various average traffic speed conditions. Afternoon peak hour traffic speeds assumed for the various roadway links are shown in Table M-1. Speeds of 25 or 35 mph were assumed for most freeway segments. Speeds of 10, 15, or 25 mph were assumed for most surface street segments.

M.2.2.6. Excess Idling Emissions

The equations used in the vehicle emission rate models incorporate coefficients representing speed-dependent patterns of vehicle idling, acceleration, cruising, and deceleration. The resulting vehicle emission rates do not represent a constant speed cruise condition. Instead, they represent a pattern of speed changes representing an overall average route speed. The amount of idling time inherent in the emission rate models increases from about 2 percent of travel time at 55 mph to 10 percent at 30 mph and to 48 percent at 5 mph (Smith and Aldrich 1977; Sculley 1989). This inherent pattern adequately accounts for congestion-relatedidling on most roadways that do not experience significant congestion or signalization delays.

The amount of vehicle idling occurring at congested or signalized intersections can exceed the amount of idling inherent in the vehicle emission rate models, even if low intersection approach speeds are assumed. To more adequately account for the amount of idling at congested intersections, special adjustments were made to the basic EMFAC7F emission rates for roadway links at congested intersections.

The basic idle adjustment procedure uses the length of a modeled roadway link and the assumed average vehicle speed to determine the amount of idling time inherent in the associated EMFAC7F emission rate. This idling time value can then be compared to an estimate of expected actual delay time per vehicle (based on intersection delay analyses, level-of-service estimates, or signal cycle times). If the expected actual delay per vehicle exceeds the idling time accounted for in the vehicle emission rates, an excess idling emission rate increment can be calculated and added to the basic EMFAC7F rate.

Traffic modeling studies by Dowling Associates provided an estimate of vehicle delay times for major intersections and freeway ramp areas. Table M-1 shows the delay time per vehicle assumed for each of the modeled roadway links.

The EMFAC7F model does not provide a direct calculation of idling emission rates, but idling rates can be estimated from emission rates at low average speeds. The conventional approach for estimating hot stabilized idling emission rates is to convert a 5-mph, 100% hot stabilized emission rate into a time-based rate (grams of pollutant per minute). Because of the internal structure of the EMFAC7F model, it is also necessary to calculate a cold start correction factor from 100% stabilized mode and 100% cold start mode emission rates at a speed of 16 mph.

Table M-5 shows the idling delay adjustments used for freeway links under the No Action scenario. Table M-6 shows the freeway link idling adjustments used all four of the Vision 2000 plan alternatives (Alternatives A, B, C, and D). Tables M-7 through M-11 summarize the idling delay adjustments used for surface street emission rates under the No Action Alternative and the four Vision 2000 plan alternatives.

M.3. Motor Vehicle Emission Estimates

Ozone and carbon monoxide are the pollutants most strongly correlated with motor vehicle emissions. Carbon monoxide is a direct emission product resulting from fuel combustion. Ozone is not emitted directly to the atmosphere, but is formed from complex chemical reactions in the atmosphere in the presence of sunlight. The directly emitted pollutants which produce ozone through photochemical reactions fall into two groups: reactive organic compounds and nitrogen oxides. Motor vehicle emissions are a major source of both pollutant groups.

Air pollutant emissions associated with vehicle travel under the alternative reuse plans were estimated by combining appropriate vehicle emission rates and travel pattern estimates. Travel pattern estimates were developed to reflect typical trip patterns for average weekday conditions. Traffic studies conducted EIS/EIR were used as the starting point for the trip generation and travel pattern analysis.

Vehicle emission rates were calculated using the EMFAC7F vehicle emission rate model. As noted previously, the approach used to generate appropriate vehicle emission rates for an ozone precursor analysis differs somewhat from the approach used for carbon monoxide dispersion modeling. Because vehicle emission rates are nonlinear functions of speed and operating mode conditions, using single "daily average" values for key parameters can introduce significant errors into the emission estimates. A better approach is to develop distribution patterns that reflect vehicle operating conditions and speeds over an entire day.

Trip generation for each land use category was disaggregated into trip purpose components. Travel time distributions were estimated for each trip purpose category. The travel time distributions provided a mean travel time and a mean vehicle operating mode pattern. The mean travel time was then combined with a speed distribution pattern to compute appropriate weighted average travel distances and emission rates for each trip purpose. The travel distances and emission rates were then combined to produce estimated vehicle emissions for trips associated with each land use category for a particular reuse scenario.

Major steps in the analysis procedure are discussed below. Tabular summaries for most of the major steps are presented at the end of the discussion.

M.3.1. Trip Generation

Trip generation estimates presented in the EIS/EIR were developed separately for auto traffic and truck traffic, based on data provided by Jordan Woodman Dobson (for maritime facilities) and Nolte and Associates (for rail facilities). Vehicle trip estimates for employee traffic were based on published trip generation rates (Institute of Transportation Engineering, 1991). The standard trip generation rates were subsequently adjusted to reflect ridesharing, transit use, and other trip reduction measures. Truck trip estimates were developed primarily from estimates of ship cargo movements and the options for rail versus truck transport of these cargoes.

M.3.2. Travel Patterns

Travel pattern estimates were developed from two components: estimated travel time distributions for various trip types, and estimated vehicle speed distributions for the same trip types. The travel time and vehicle speed distributions represent professional judgment based on regional land use patterns, regional transportation systems, existing employee residency pattern data, previous analyses of travel patterns as represented by various regional traffic models, and previous analyses of data from regional and statewide travel pattern surveys.

Table M-12 presents the trip duration patterns used for the analysis of auto trips. A limited amount of comparison information is available from travel survey data collected by federal, state, and regional agencies. Data from the 1980 census give an average home-work commute trip duration of 26 minutes for the San Francisco/Oakland (US Federal Highway Administration 1985). More recent Caltrans data also show a similar average commute trip duration (25 minutes) for the Bay Area (California Department of Transportation, 1992). The travel time distribution pattern for home-work commute trips has an average travel time (24.75 minutes) close to the Caltrans and Census estimates. Travel time distribution patterns for other trip purposes are based primarily on professional judgment.

Employee residency surveys conducted in 1993 indicate an average commute distance of about 18 miles for Port and FISCO employees (Table M-13). More limited employee travel surveys conducted for the Port of Oakland in 1995 show that more than half of the employees report a commute distance of more than 10 miles, with nearly 8% reporting a commute distance of 30 miles or more.

Truck origin destination pattern data for the Port of Oakland indicate that 71% of the Port-related truck trips begin and end in the San Francisco Bay Area, with the remaining 29% traveling to or from other parts of California or other states (Table M-14).

The travel distance data in Tables M-13 and M-14 were used to adjust travel time and travel speed pattern assumptions so as to generate realistic travel distance values.

M.3.3. Vehicle Emission Rates

A general discussion of the EMFAC7F vehicle emission rate model was presented in the discussion of carbon monoxide dispersion modeling procedures. The nature of ozone precursor emissions analysis procedures requires that EMFAC7F emission rates be based on:

- daily, rather than peak hour, patterns of vehicle activity;
- land use-generated vehicle trips (by trip purpose categories), rather than total traffic on particular types of roadways; and
- summer temperature patterns, rather than winter patterns.

In addition to computing the proper weighted average emission rates from EMFAC7F output files, the spreadsheet version of EMFAC7F included complete calculations of diurnal and multiday diurnal evaporative emissions. These calculations are normally performed by a separate computer model (BURDEN7F) when CARB prepares emission inventories.

Table M-15 summarizes emission rates for reactive organic compounds and nitrogen oxides. Table M-16 summarizes emission rates for PM_{10} and carbon monoxide. Key input data and assumptions used for the vehicle emissions analysis are discussed below.

M.3.3.1. Calendar Years

Emission rates used for this analysis represent expected vehicle mixes for 2010.

M.3.3.2. Air Temperature

Exhaust emission rates were calculated for a mean summer day air temperature of 70 degrees Fahrenheit. Winter carbon monoxide exhaust emission rates were also calculated, using an air temperature of 50 degrees Fahrenheit. Evaporative emissions were calculated for a summer day temperature profile that varied from a low of 55 degrees Fahrenheit to a high of 80 degrees Fahrenheit. Intermediate temperatures used for computing diurnal emissions were: 58 degrees at 8 a.m., 61 degrees at 9 a.m., 71 degrees at 11 a.m., and 76 degrees at 1 p.m.

M.3.3.3. Vehicle Mixes

Separate vehicle type mixes were used for port-related auto traffic (mostly employees) and port-related truck traffic. The auto traffic vehicle mix included 73.33% autos, 23.27% light trucks/vans, 2.37% medium trucks/vans, 0% gasoline-fueled heavy duty trucks, 0% diesel-fueled heavy duty trucks, and 1.03% motorcycles. The truck traffic vehicle mix included 5% gasoline-fueled heavy duty trucks and 95% diesel-fueled heavy duty trucks, with no other vehicle types.

M.3.3.4. Vehicle Operating Modes

Table M-12 included the calculation of daily average vehicle operating mode conditions for the trip purpose categories use in the ozone precursor emissions analysis. The operating mode conditions were computed directly from the trip duration patterns assumed for this analysis.

M.3.3.5. Vehicle Speeds

The speed profiles assumed for each trip purpose category are presented the tables that follow. In general, home-work trips were assumed to have a speed profile that

produced an average speed of 45 mph. Work-other trips had an speed profile averaging 40 mph. Other trip types had speed profiles averaging about 35 mph.

M.3.4. Emission Calculations for Autos and Trucks

Emission estimates for vehicle traffic under the various alternatives are presented in the following tables. Tables M-12 through M-16 provide data used for all alternatives. Tables M-17 through M-22 provide the analysis for the No Action Alternative. Tables M-23 through M-28 provide the analysis for the Maximum Marine/Maximum Rail Alternative (referred to as Alternative A). Tables M-29 through M-34 provide the analysis for the Minimum Marine/Minimum Rail Alternative (referred to as Alternative B). Tables M-35 through M-40 provide the analysis for the Maximum Marine/Minimum Rail Alternative (referred to as Alternative C). Tables M-41 through M-46 provide the analysis for the Reduced Harbor Fill Alternative (referred to as Alternative D).

The primary emission calculation process was based on estimates of average daily vehicle trip patterns. Annual emission estimates were derived by assuming 250 working days per year.

M.4. Locomotive Emission Estimates

Emission estimates for rail traffic associated with the Port of Oakland have been based on data developed primarily for use in traffic impact analyses.

M.4.1. Train Categories and Sizes

Table M-47 summarizes the characteristics of various trains potentially using rail segments through the Bay Area. Amtrak trains pass through the West Oakland rail yard, and use portions of the rail yard for assembly and maintenance of trains. Local and long-haul freights pass through the West Oakland yard, with some trains originating from the yard. In general, 6,000-foot freights are the longest trains assembled at the West Oakland yard.

M.4.2. Major Rail Routes

The rail traffic data used for this analysis was developed with a focus on northwestern Alameda and western Contra Costa Counties. Rail traffic projections were made for the main rail lines north and south of the West Oakland railyard. These projections, however, did not identify ultimate destinations beyond northern Alameda or western Contra Costa Counties. To fully address emissions from rail operations, it was necessary to extrapolate the rail traffic projections to major rail routes leading out of the Bay Area toward the Sacramento Valley, San Joaquin Valley, and the Monterey Bay/Salinas Valley area. Table M-47 identifies the lengths of various main track segments in the Bay Area.

Rail traffic on the main line north of Oakland was split into Sacramento Valley and San Joaquin Valley components. Freight traffic was evenly split between these two corridors. All long (interstate) Amtrak trains were assigned to the Sacramento Valley corridor. Short (intrastate) Amtrak trains were assigned 60% to the Sacramento Valley and 40% to the San Joaquin Valley corridors.

Rail traffic on the main line south of Oakland was separated into the San Joaquin Valley and South Bay/Salinas corridors. Local freights were split evenly between San Jose area destinations and Monterey/Salinas destinations (Gilroy). All intermodal

freights south of Oakland were assigned to the San Joaquin Valley corridor (via Livermore).

Projected 2010 rail traffic estimates (number of trains and gross ton-miles of rail activity) are presented in Tables M-48 (No Action), M-50 (Maximum Marine/Maximum Rail or Alternative A), M-52 (Minimum Marine/Minimum Rail or Alternative B), M-54 (Maximum Marine/Minimum Rail or Alternative C), and M-56 (Reduced Harbor Fill or Alternative D).

M.4.3. Locomotive Emission Rates and Emission Estimates

The number of locomotives used for a train depends on the total gross weight of the train and terrain conditions along the train's route. Emission rates for rail operations can be given in several different format (such as emissions per hour at different throttle settings for individual locomotives, emissions per pound of fuel burned, or emissions per gross ton-mile of train travel). Emission rates given in the EPA emission inventory guidance document (US Environmental Protection Agency, 1992) are standardized on the basis or gross train weight and distance traveled. Emission rates in this ton-mile format account for the use of multiple engines on heavy trains. Table M-47 identifies emission rates applicable to different train types and sizes.

Table M-49 presents annual rail traffic emissions for major rail segments under the No Action Alternative. Table M-51 presents rail traffic emission estimates for the Maximum Marine/Maximum Rail Alternative (Alternative A). Table M-53 presents rail emission estimates for the Minimum Marine/Minimum Rail Alternative (Alternative B). Table M-55 presents rail emission estimates for the Maximum Marine/Minimum Rail Alternative (Alternative C). And Table M-57 presents rail emission estimates for the Reduced Harbor Fill Alternative (Alternative D).

A summary comparison of rail traffic emission for the various alternatives is presented in Table M-58. Also included in Table M-58 is a summary of the net emission increases (compared to the No Action Alternative) for the four reuse plan alternatives.

M.5. Cargo Ship Emission Estimates

The major types of ships using the Port of Oakland include container ships, bulk carriers, and various general cargo ship types. Ship sizes are generally specified either by physical dimensions (length and draft), or by dead weight tons (dwt). Most ships using the Port of Oakland operate with marine diesel engines. A relatively low percentage of cargo ships use steam boilers. While moored at the Port, ships provide their own electrical power and other utilities. Large diesel generators are used for this purpose by most ships. Steam powered ships often switch from heavy bunker fuels to lighter distillate oil fuel for power and utility service while moored.

M.5.1. Ship Call Projections

Table M-59 summarizes the types and sizes of cargo vessels that used the Port of Oakland in 1991 (based on data in California Air Resources Board, 1991). Container ships represented the majority of ship traffic (72%). Bulk carriers represented 17% of the ship traffic, and other cargo vessel types represented 11% of the traffic. Most ships using the Port of Oakland were less than 50 dwt in size.

Average ship sizes are expected to increase in the future, especially for container ships. The sizes of ships that use the Port of Oakland will depend largely on the depth of ship channels serving the Port. Although no specific forecasts of ship sizes and types have been prepared for the Port of Oakland, the traffic analyses prepared for this EIS/EIR assume that average ship sizes will increase in the future.

Future ship size distributions were estimated by assuming that the percentages of container, bulk carrier, and other cargo vessel traffic will remain the same as at present, but that the size distribution of marine diesel container ships will shift toward larger average sizes. Emission forecasts for 2010 assumed that 10% of diesel container ships would be less than 25 dwt (compared to 28.1% in 1991), 65% would be 25-50 dwt (compared to 58.5% in 1991), 20% would be 50-75 dwt (compared to 10.4% in 1991, and 5% would be 75-100 dwt (compared to 3% in 1991). As noted in Table M-59, most cargo vessels remain moored at the port for 30-36 hours.

M.5.2. Ship Emission Rates and Emission Estimates

Vessel emission rates used for this analysis are summarized in Table M-60. The emission rates come primarily from California Air Resources Board (1991). Emission rates for diesel generators are from US Environmental Protection Agency (1993). Ship transit times and throttle settings for movements into and out of the Port of Oakland are from California Air Resources Board (1991). Potential fuel use rates for various ship types and sizes are presented in Table M-59. Actual average fuel use factors in Table M-60 are from California Air Resources Board (1991) and Port of Long Beach (1986). Each ship visiting the Port of Oakland makes two movements: transit from the ocean to the Port of Oakland, and transit from the Port of Oakland to the ocean.

Table M-61 presents year 2010 emission estimates for the No Action Alternative. Table M-62 presents emission estimates for the Maximum Marine/Maximum Rail Alternative (Alternative A). Table M-63 presents emission estimates for the Minimum Marine/Minimum Rail Alternative (Alternative B). Table M-64 presents emission estimates for the Maximum Marine/Minimum Rail Alternative (Alternative C). Table M-65 presents emission estimates for the Reduced Harbor Fill Alternative (Alternative D). Table M-66 provides a summary comparison of ship emissions for the various alternatives. Also included in Table M-66 is a summary of the net emission increases (compared to the No Action Alternative) for the four reuse plan alternatives.

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TABLE M-1. ROADWAY NETWORK USED FOR CALINE4 DISPERSION MODELING

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					40 1	1608	4 7538	7521	7532	7530	7521	25	30	30	30	30	30
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	125 6085		13728 74	7442 ,	40 1	1486	8 11402	11375	11392	11388	11375	52	30	30	30	30	30
				9655	40 2	2218	8 11402	11375	11392	11388	11375	25	30	30	30	30	30
280	377 9655			11063	40 1	1414	8 12622	12626	12630	12630	12627	25	93	30	30	30	30

TABLE M·1. ROADWAY NETWORK USED FOR CALINEA DISPERSION MODELING

		LINK	SEGMENT	LINK SEGMENT COORDINATES	SS					PM PEA	PM PEAK HOUR VOLUMES	lES	_	PEAK HR	30 DE	LAY TIME	DELAY TIME PER VEHICLE (SEC)	LE (SEC)	
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I · 580	E OF JNCTN	8674	9152	9730	9202	40	1057	10	18173	18205	18195	18194	18205	25	45	45	45	45	45
	W OF PERALTA	9730	9202	10560	9630	40	933	10	18173	18205	18195	18194	18205	25	45	45	45	45	45
	W OF 980	10560	9630	13577	9655	45	3017	10	18173	18205	18195	18194	18205	25	45	45	45	45	45
	E OF 980	13577	9655	14809	9605	45	1233	æ	15427	15427	15429	15427	15427	52	45	45	45	45	45
MARITIME	S OF W GRAND	7543	7593	7291	7166	0	496	4	1535	1515	1615	1577	1512	10	19	19	19	19	19
	S OF BURMA RD	7291	7166	6512	5531	0	1811	4	1280	1318	1347	1386	1319	25	10	10	10	6	6
	S OF 14TH	6512	5531	5883	4199	0	1473	4	1505	1740	1697	1828	1752	52	20	20	22	20	20
	S OF 7TH ST EXT	5883	4199	5632	3696	0	295	4	1137	1372	1329	1460	1384	10	11	14	20	13	14
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	. E OF MARITIME	5632	3696	6210	3797	0	287	4	1403	1846	1814	1731	1898	52	5	5	5	2	5
	7TH ST EXTNSN	5883	4199	6210	3797	0	518	4	407	2375	1062	1469	2454	10	19	14	20	29	15
	W OF 880 + RAMP	6210	3797	7593	3897	0	1387	4	948	1618	1236	1968	1763	25	2	5	2	2	2
	E OF 880 + RAMP	7593	3897	9056	3897	0	1433	4	1204	1507	1505	1524	1570	15	19	18	18	18	19
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	EDGE OF RR YARD	8951	1634	10962	2816	0	2333	4	1612	1749	1628	1877	1786	15	19	32	32	46	36
	S OF 3RD	10962	2816	11088	3193	0	398	4	1612	1749	1628	1877	1786	10	38	64	64	35	72
ANEL INF	S OF 880 + RAMP	11088	3193	11088	3696	c	503	4	1321	1374	1338	1414	1382	25	ហ	S.	ĸ	Ľ	ហ
	N OF 880 + RAMP	11088	3696	11088	4174	0	478	4	1446	1583	1462	1711	1620	10	50	30	21	52	31

TABLE M.1. ROADWAY NETWORK USED FOR CALINEA DISPERSION MODELING

		LINK	SEGMENT (LINK SEGMENT COORDINATES	S					PM PEAN	PM PEAK HOUR VOLUMES	ÆS		PEAK HR	30	LAY TIME	DELAY TIME PER VEHICLE (SEC)	LE (SEC)	
ROADWAY	SEGMENT	X1 Y1 X2 Y2	Ľ	x		SEGMENT HEIGHT LENGTH	SEGMENT	LANES NO ACTION	NO ACTION	ALT A	ALT A ALT B ALT C	1	ALT D	BASE	NO ACT ALT A ALT B ALT C	ALT A	ALT B	ALT C	ALT D
NO THE	N OF SSO + BAMB	10635	3193	10635	3671	0	478	4	1000	1073	096	902	1081	10	16	17	16	16	17
NOTAG	S OF 880 + RAMP	10635	3671	10635	4174	0	503	4	433	433	433	433	433	52	5	2	S	z,	2
FRONTAGE	S OF W GRAND	8950	7141	8222	5733	0	1585	4	1547	1569	1650	1753	1565	25	2	S	5	S	2
	S OF 14TH	8222	5733	7819	4928	0	006	4	512	902	717	836	778	52	2	သ	2	သ	rs.
W GRAND	W OF FRONTAGE	7543	7593	8950	7141	0	1478	4	2213	2267	2292	2276	2340	25	2	22	2	2	ß
	E OF FRONTAGE	8950	7141	9931	6864	0	1019	4	1149	1031	1127	1093	1028	10	22	22	22	22	ಣ

TABLE M-2. CALINE4 RECEPTOR COORDINATES

RECEPTOR LOCATION	X - COORD	Y-COORD	OFFSET
MARITIME & BURMA, NW	7,262	7,264	75
MARITIME & BURMA, SW	7,192	7,132	75
MARITIME & BURMA, NE	7,396	7,197	75
MARITIME & BURMA, SE	7,326	7,065	75
MARITIME & 7TH ST EXT, NW MARITIME & 7TH ST EXT, SW MARITIME & 7TH ST EXT, NE MARITIME & 7TH ST EXT, SE	5,868	4,320	65
	5,806	4,190	65
	5,959	4,208	65
	5,896	4,080	65
7TH & 880, NW	7,535	3,958	65
7TH & 880, SW	7,567	3,830	65
7TH & 880, NE	7,666	3,962	65
7TH & 880, SE	7,746	3,832	65
ADELINE & 3RD, NW	11,023	3,258	65
ADELINE & 3RD, SW	10,998	3,128	65
ADELINE & 3RD, NE	11,153	3,258	65
ADELINE & 3RD, SE	11,135	3,128	65
ADELINE & 880, NW	11,023	3,743	65
ADELINE & 880, SW	11,023	3,613	65
ADELINE & 880, NE	11,153	3,746	65
ADELINE & 880, SE	11,153	3,616	65
PORT VIEW PARK	2,693	2,323	
MIDDLE HARBOR PARK	8,712	713	
ERNIE RAIMONDI FIELD	9,425	6,890	
WILLOW MINI PARK	9,240	5,729	
BERTHA PORT TOT LOT	8,554	4,330	
CHESTER STREET TOT LOT	9,821	3,515	

Note: Coordinates and roadway offset distances are in feet.

TABLE M-3. OPERATING MODES FOR SURFACE STREET TRAFFIC

TRIP PURPOSE	TRIP PURPOSE MIX	HOT STABLE FRACTION	_	COLD START FRACTION	HOT START FRACTION
H-W H-S H-O O-W O-O	40.00% 10.00% 20.00% 20.00% 10.00%	50.00% 45.00% 60.00% 50.00% 45.00%		46.25% 28.97% 27.23% 31.20% 15.77%	3.75% 26.03% 12.77% 18.80% 39.23%
CHECKSUM:	100.00%	51.00%	WTD MEAN:	34.66%	14.34%

START MODE = FIRST 505 SECONDS OF VEHICLE TRAVEL STABLE MODE = TRAVEL AFTER 505 SECONDS OF VEHICLE OPERATION

CATALYST FRACTION FOR LDA + LDT + MDT + MC 98.92%

	COLD START	HOT START	
CATALYST	34.76%	14.24%	
NONCATALYST	25.85%	23.15%	

START MODE SPLIT FACTORS:

	CATALYST	VEHICLES	NONCAT V	'EHICLES
TRIP	COLD	HOT	COLD	HOT
PURPOSE	STARTS	STARTS	STARTS	STARTS
H-W	92.63%	7.37%	80.04%	19.96%
H-S	52.89%	47.11%	33.61%	66.39%
H-O	68.35%	31.65%	43.38%	56.62%
O-W	62.64%	37.36%	40.73%	59.27%
O-O	28.90%	71.10%	8.25%	91.75%
WTD MEAN:	71.43%	28.57%	53.02%	46.98%

TABLE M-4. OPERATING MODES FOR FREEWAY TRAFFIC

TRIP PURPOSE	TRIP PURPOSE MIX	HOT STABLE FRACTION		COLD START FRACTION	HOT START FRACTION
H-W H-S H-O O-W O-O	60.00% 5.00% 10.00% 20.00% 5.00%	90.00% 65.00% 80.00% 80.00% 82.50%		9.25% 18.44% 13.62% 12.48% 5.02%	0.75% 16.56% 6.38% 7.52% 12.48%
CHECKSUM:	100.00%	85.38%	WTD MEAN:	10.58%	4.04%

START MODE = FIRST 505 SECONDS OF VEHICLE TRAVEL STABLE MODE = TRAVEL AFTER 505 SECONDS OF VEHICLE OPERATION

CATALYST FRACTION FOR LDA + LDT + MDT + MC 98.92%

	COLD START	HOT START	
CATALYST	10.61%	4.02%	
NONCATALYST	7.96%	6.67%	

START MODE SPLIT FACTORS:

	CATALYST	VEHICLES	NONCAT VE	HICLES
TRIP PURPOSE	COLD STARTS	HOT STARTS	COLD STARTS	HOT STARTS
H-W H-S H-O O-W O-O	92.63% 52.89% 68.35% 62.64% 28.90%	7.37% 47.11% 31.65% 37.36% 71.10%	80.04% 33.61% 43.38% 40.73% 8.25%	19.96% 66.39% 56.62% 59.27% 91.75%
WTD MEAN:	79.03%	20.97%	62.60%	37.40%

TABLE M.5. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	80.1	80-2	80.3	880.1	880-2	880-3	880-4	880.5	9-088	880-7	880-8	6-088	880-10	880 - 11
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	35	25	25	35	35	35	35	35	35	35	35
I INK LENGTH. FEET	6,625	2,936	2,113	2,826	1,074	926	2,507	1,063	206	1,075	836	664	1,333	1,154
DELAY PER VEHICLE. SECONDS OF IDLE	20	20	75	5	30	30	15	15	10	10	10	10	10	10
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
1 % CATALYST VEHICLES	98.95	98.95	98.92	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.92	98.92	98.92	98.92
1 % NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	96.7	7.96	7.96	7.96	7.96
% CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
OUTPUT														
HOT STABILIZED IDLE RATE. GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	96.0
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3,3557	3.3557	3.3557	3.3557	3.3557	3.3557
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	6.99	13.65	13.65	6.99	6.99	66.9	6.99	6.99	6.99	6.99	6.99
I IDLE SECONDS IN EMFAC/MOBILE RATES	24.66	10.93	7.87	3.85	4.00	3.63	3.41	1.45	1.24	1.46	1.14	06.0	1.82	1.57
REQUIRED EXTRA IDLE SECONDS	25.34	9.07	67.13	1.15	26.00	26.37	11.59	13.55	8.76	8.54	8.86	9.10	8.18	8.43
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
ADDED IDLE ADJUSTMENT, GM/MI	0.41	0.33	3.43	0.04	2.62	2.95	0.50	1.38	1.04	0.86	1.15	1.48	99.0	0.79
ADJUSTED EMISSION RATE, GM/MI	4.18	4.10	7.20	3.02	6.39	69.9	3.48	4.36	4.02	3.84	4.13	4.46	3.64	3.77
ADJUSTMENT FACTOR, % INCREASE	11.0%	8.9%	91.1%	1.5%	69.4%	77.5%	16.8%	46.2%	35.1%	28.8%	38.5%	49.7%	22.3%	26.5%

TABLE M-5. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	880-12	980-1	980-2	980-3	980-4	980 - 5	9-086	980-7	SR 24	580-1	580-2	580-3	580-4
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	25	52	25	25	25	25	25	25	25	25
LINK LENGTH, FEET	1,761	635	509	1,608	1,869	513	1,486	2,218	1,414	1,057	933	3,017	1,233
DELAY PER VEHICLE, SECONDS OF IDLE	35	30	30	30	30	30	30	30	30	45	45	45	45
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	2.07	2.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
* CATALYST VEHICLES	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.92
1 % NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
% CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
OUTPUT													
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	96.0	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
1 % IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
I IDLE SECONDS IN EMFAC/MOBILE RATES	6.56	2.36	1.89	5.99	96.9	1.91	5.53	8.26	5.26	3.93	3.47	11.23	4.59
REQUIRED EXTRA IDLE SECONDS	28.44	27.64	28.11	24.01	23.04	28.09	24.47	21.74	24.74	41.07	41.53	33.77	40.41
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
ADDED IDLE ADJUSTMENT, GM/MI	1.75	4.70	5.97	1.61	1.33	5.95	1.78	1.06	1.89	4.20	4.81	1.21	3.54
ADJUSTED EMISSION RATE, GM/MI	5.52	8.47	9.74	5.38	5.10	69.6	5.55	4.83	5.66	7.97	8.58	4.98	7.31
ADJUSTMENT FACTOR, % INCREASE	46.3%	124.8%	158.3%	42.8%	35.4%	157.0%	47.2%	28.1%	50.2%	111.4%	127.6%	32.1%	94.0%

TABLE M.6. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: VISION 2000 PLAN FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	80.1	80-2	80.3	880-1	880-2	880-3	880-4	880-5	9-088	880-7	8.088	880-9	880-10	880.11
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	35	25	25	35	35	35	35	35	35	35	35
LINK LENGTH. FEET	6,625	2,936	2,113	2,826	1,074	9/6	2,507	1,063	206	1,075	836	664	1,333	1,154
DELAY PER VEHICLE, SECONDS OF IDLE	20	20	75	22	30	30	15	15	10	10	10	10	10	15
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
1 % CATALYST VEHICLES	98.92	98.92	98.92	98.95	98.95	98.95	98.95	98.95	98.92	98.95	98.95	98.92	98.95	98.92
(% NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	96.7	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
X CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
0UTPUT														
HOT STABILIZED IDLE RATE. GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE. GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3,3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3,3557	3.3557	3.3557	3.3557
1 % IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	6.99	13.65	13.65	6.99	6.99	6.99	6.99	6.99	6.99	6.99	6.99
I TOLE SECONDS IN EMFAC/MOBILE RATES	24.66	10.93	7.87	3.85	4.00	3.63	3.41	1.45	1.24	1.46	1.14	06.0	1.82	1.57
REQUIRED EXTRA IDLE SECONDS	25.34	9.07	67.13	1.15	26.00	26.37	11.59	13.55	8.76	8.54	8.86	9.10	8.18	13.43
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
ADDED IDLE ADJUSTMENT, GM/MI	0.41	0.33	3.43	0.04	2.62	2.92	0.50	1.38	1.04	98.0	1.15	1.48	99.0	1.26
ADJUSTED EMISSION RATE, GM/MI	4.18	4.10	7.20	3.02	6.39	69.9	3.48	4.36	4.02	3.84	4.13	4.46	3.64	4.24
ADJUSTMENT FACTOR, % INCREASE	11.0%	8.9%	91.1%	1.5%	69.4%	77.5%	16.8%	46.2%	35.1%	28.8%	38.5%	49.7%	22.3%	42.2%

TABLE M.6. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: VISION 2000 PLAN FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	880-12	980-1	980-2	980-3	980-4	980-5	9-086	980-7	SR 24	580-1	580-2	580-3	580-4
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	25	25	25	25	25	25	25	25	25	25
LINK LENGTH, FEET	1,761	635	200	1,608	1,869	513	1,486	2,218	1,414	1,057	933	3,017	1,233
DELAY PER VEHICLE, SECONDS OF IDLE	45	30	30	30	30	30	30	30	30	45	45	45	45
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
% CATALYST VEHICLES	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.92
% NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
% CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
OUTPUT													
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3,3557	3.3557	3.3557	3.3557	3.3557
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	95.9	2.36	1.89	5.99	96.9	1.91	5.53	8.26	5.26	3.93	3.47	11.23	4.59
REQUIRED EXTRA IDLE SECONDS	38.44	27.64	28.11	24.01	23.04	28.09	24.47	21.74	24.74	41.07	41.53	33.77	40.41
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
ADDED IDLE ADJUSTMENT, GM/MI	2.36	4.70	5.97	1.61	1.33	5.95	1.78	1.06	1.89	4.20	4.81	1.21	3.54
ADJUSTED EMISSION RATE, GM/MI	6.13	8.47	9.74	5.38	5.10	69.6	5.55	4.83	2.66	7.97	8.58	4.98	7.31
ADJUSTMENT FACTOR, % INCREASE	62.6%	124.8%	158.3%	42.8%	35.4%	157.0%	47.2%	28.1%	50.2%	111.4%	127.6%	32.1\$	94.0%

TABLE M.7. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7ТН-1	7ТН-2	7TH-3	7TH-4	7ТН-ЕХТ	7ТН-6	7TH-7 M	HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	25	25	25	25	10	25	15	25
I INK LENGTH, FEET	496	1,811	1,473	562	1,193	731	1,075	287	518	1,387	1,433	1,032
I DELAY PER VEHICLE. SECONDS OF IDLE	19	10	50	11	2	വ	2	ည	19	2	19	2
BASE EMISSION RATE. GM/MI	12.02	6.17	6.17	12.02	6.17	6.17	6.17	6.17	12.02	6.17	9.05	6.17
1 100% STABILIZED 5 MPH RATE. GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
1 % CATALYST VEHICLES	98.92	98.92	98.95	98.92	98.92	98.95	98.95	98.95	98.92	98.95	98.92	98.92
2 NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE. GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
2 TOLE TIME IN EMPAC/MOBILE RATES	32.99	13.65	13.65	32.99	13.65	13.65	13.65	13.65	32.99	13.65	25.39	13.65
The Seconds in EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	4.44	2.72	4.00	2.19	11.65	5.16	16.54	3.80
REQUIRED EXTRA IDLE SECONDS	7.84	3.26	14.52	0.00	0.56	2.28	1.00	2.81	7.35	0.00	2.46	1.20
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	6.17	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ADDED IDLE ADJUSTMENT. GM/MI	2.25	0.26	1.41	0.00	0.07	0.44	0.13	0.68	2.05	0.00	0.24	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.43	7.58	12.02	6.24	6.61	6.30	6.85	14.04	6.17	9.26	6.34
ADJUSTMENT FACTOR, % INCREASE	18.8%	4.2%	22.8%	0.0%	1.1%	7.2%	2.1%	11.1%	16.8%	0.0%	2.7%	2.7%

TABLE M.7. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HRBR-3	HRBR-3 M	HRBR-4 M	HRBR-5 A	ADELIN-1 A	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	52	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	006	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	5	2	19	38	2	20	16	2	2	2	ა	22
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.92	98.95	98.92	98.92	98.92	98.92	98.95	98.95	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	00.00	0.00	0.00	29.05	3.13	9.25	5.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.00	10.41	0.89	2.76	1.57	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.05	22.43	7.06	14.78	13.59	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	0.0%	86.6%	14.4%	23.0%	13.0%	14.4%	0.0%	4.2%	0.0%	0.0%

TABLE M.8. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE A SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7TH-1	7TH-2	7тн-3	7ТН-4	7TH-EXT	7ТН-6	7TH-7 M	HRBR-1
CAPTER AMPLY COB DACE EMISSION RATE	10	25	25	10	15	25	25	25	10	25	15	25
SPEED (MPH) FOR DASK ENISSION BATE	496	1.811	1,473	562	1,193	731	1,075	287	518	1,387	1,433	1,032
LINN LENGTH, TEEL	19	10	. 20	14	16	5	22	2	14	2	18	വ
DELAT FEN VEHICLE, SECONDS ST. 2011	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
1 100% STARTI TZEN 5 MPH RATE GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
1 100% STABILIZED STATE GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD STABT 16 MPH RATE GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
LOOA COLD STANT TO THIS ISSUED TO THE STANT OF THE STANT	98.92	98.92	98.92	98.92	98.92	98.95	98.95	98.92	98.95	98.95	98.95	98.92
A CAIACISI VEILLES	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
0UTPUT												
CATABILITED IN E DATE CM/MIN	1 33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
HOI SIABILIZED IDLE INTE, GRANTI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
ADJUSTED COLD START STREET INTE, GIVILL	2 1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
CULD SIAK! IDLE MAIL, GIVILIN	32 99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39	13.65
A IDLE IIME IN EMEACAMOBILE MATES	11 16	6.74	5.48	12.64	13.77	2.72	4.00	2.19	11.65	5.16	16.54	3.80
I DEE SECONDS IN EM ACCHIGATE STATES	7.84	3.26	14.52	1.36	2.23	2.28	1.00	2.81	2.35	0.00	1.46	1.20
REQUIRED EATING IDEE SECONDS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED & COED STANS	1,6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
DASE EMISSION PATE GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ANDED TO F ADDICTMENT GM/MI	2.25	0.26	1.41	0.34	0.27	0.44	0.13	0.68	0.65	00.0	0.15	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.43	7.58	12.36	9.29	6.61	6.30	6.85	12.67	6.17	9.17	6.34
ADJUSTMENT FACTOR, % INCREASE	18.8%	4.2%	22.8%	2.9%	3.0%	7.2%	2.1%	11.1%	5.4%	0.0%	1.6%	2.7%

TABLE M-8. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE A SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HRBR-3	HRBR-3 M	HRBR-4 M	HRBR-5 A	ADELIN-1 A	ADEL IN 2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	52	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	006	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	2	വ	32	64	S	30	17	2	ស	5	5	22
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.92	98.95	98.95	98.95	98.92	98.92	98.95	98.92	98.92	98.92	98.95	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ОИТРИТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	5.08	55.05	3.13	19.25	6.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	00.0	0.00	0.31	19.72	0.89	5.74	1.86	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.33	31.74	7.06	17.76	13.88	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	3.4%	164.1%	14.4%	47.8%	15.5%	14.4%	0.0%	4.2%	0.0%	0.0%

TABLE M-9. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE B SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7ТН-1	7TH-2	7TH-3	7TH-4	7TH-EXT	7ТН-6	7TH-7 M	HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	15	25	25	25	10	22	15	22
LINK LENGTH, FEET	496	1,811	1,473	295	1,193	731	1,075	287	518	1,387	1,433	1,032
DELAY PER VEHICLE, SECONDS OF IDLE	19	10	22	70	10	ည	ည	വ	20	2	18	2
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.95	98.92	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.92	98.95	98.95
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	13.77	2.72	4.00	2.19	11.65	5.16	16.54	3.80
REQUIRED EXTRA IDLE SECONDS	7.84	3.26	16.52	7.36	0.00	2.28	1.00	2.81	8.35	0.00	1.46	1.20
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ADDED IDLE ADJUSTMENT, GM/MI	2.25	0.26	1.60	1.87	0.00	0.44	0.13	0.68	2.30	0.00	0.15	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.43	7.77	13.89	9.05	6.61	6.30	6.85	14.32	6.17	9.17	6.34
ADJUSTMENT FACTOR, % INCREASE	18.8%	4.2%	25.9%	15.5%	0.0%	7.2%	2.1%	11.1%	19.1%	0.0%	1.6%	2.7%

TABLE M.9. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE B SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HRBR-3	HRBR-3 M	HRBR-4 M	HRBR-5 A	ADELIN-1 A	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH. FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	006	1,478	1,019
I DELAY PER VEHICLE. SECONDS OF IDLE	2	2	32	64	5	21	16	2	2	2	2	55
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
1 100% STABILIZED 5 MPH RATE. GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
1 100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
1 100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATAI YST VEHICLES	98.92	98.95	98.95	98.95	98.92	98.95	98.95	98.95	98.92	98.95	98.95	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IN F RATE GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
I ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE. GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
1 % IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
I TOLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	00.00	0.00	5.08	55.05	3.13	10.25	5.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	00.00	0.00	0.31	19.72	0.89	3.06	1.57	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.33	31.74	7.06	15.08	13.59	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	3.4%	164.1%	14.4%	25.4%	13.0%	14.4%	0.0%	4.2%	0.0%	0.0%
												

TABLE M-10. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE C SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7ТН-1	7TH-2	7ТН-3	7ТН-4	7тн-ехт	7ТН-6	7TH-7 M	HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	15	25	25	25	10	25	15	25
LINK LENGTH. FEET	496	1,811	1,473	295	1,193	731	1,075	287	518	1,387	1,433	1,032
DELAY PER VEHICLE. SECONDS OF IDLE	19	6	20	13	21	2	5	2	53	2	18	വ
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
1 % CATALYST VEHICLES	98.92	98.92	98.95	98.95	98.92	98.95	98.95	98.92	98.95	98.95	98.95	98.92
1 % NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE GM/MIL	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
1 % IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39	13.65
I IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	13.77	2.72	4.00	2.19	11.65	5.16	16.54	3.80
REQUIRED EXTRA IDLE SECONDS	7.84	2.26	14.52	0.36	7.23	2.28	1.00	2.81	17.35	0.00	1.46	1.20
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ADDED IDLE ADJUSTMENT, GM/MI	2.25	0.18	1.41	0.09	98.0	0.44	0.13	0.68	4.78	0.00	0.15	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.35	7.58	12.11	9.88	6.61	6.30	6.85	16.80	6.17	9.17	6.34
ADJUSTMENT FACTOR, % INCREASE	18.8%	2.9%	22.8%	0.8%	9.6%	7.2%	2.1%	11.1%	39.7%	0.0%	1.6%	2.7%

TABLE M.10. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE C SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HRBR-3 M	HRBR-3 M	HRBR-4 M	HRBR-5 A	ADELIN-1 A	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND - 1	GRAND-2
SPFFD (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	25	25	25	25	10
I LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	006	1,478	1,019
I DELAY PER VEHICLE. SECONDS OF IDLE	2	ഹ	46	95	Ŋ	22	16	5	വ	5	2	22
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
1 100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
1 100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
1 100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
1 % CATALYST VEHICLES	98.92	98.95	98.95	98.95	98.92	98.92	98.95	98.92	98.95	98.95	98.92	98.92
1 % NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT	i i											
HOT STARTITYED IDLE BATE. GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
I ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE. GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
1 % IDIF TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
I IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	19.08	83.05	3.13	11.25	5.25	3.13	0.00	1.65	00.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	1.17	29.75	0.89	3.36	1.57	0.89	0.00	0.26	00.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	10.19	41.77	7.06	15.38	13.59	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	12.9%	247.5%	14.4%	27.9%	13.0%	14.4%	0.0%	4.2%	0.0%	0.0%

TABLE M-11. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE D SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR·1	MAR-2	MAR -3	MAR-4	7тн-1	7тн-2	7TH-3	7TH-4	7ТН-ЕХТ	7ТН-6	7TH-7 M	HRBR-1
SPEED (MDH) FOR RASE EMISSION RATE	10	25	25	10	15	25	25	25	10	25	15	25
I INK I FNGTH FEET	496	1,811	1,473	295	1,193	731	1,075	287	518	1,387	1,433	1,032
DELAY PER VEHICLE. SECONDS OF IDLE	19	6	20	14	17	2	2	2	15	വ	19	വ
RASE FMISSION RATE. GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
100% STABILIZED 5 MPH RATE. GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
2 CATALYST VEHICLES	98.92	98.92	98.95	98.92	98.95	98.92	98.92	98.95	98.95	98.95	98.95	98.95
K NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE. GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE. GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COID START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
1 % IDIF TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39	13.65
The Seconds in EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	13.77	2.72	4.00	2.19	11.65	5.16	16.54	3.80
REQUIRED EXTRA IDLE SECONDS	7.84	2.26	14.52	1.36	3.23	2.28	1.00	2.81	3.35	0.00	2.46	1.20
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ADDED IDLE ADJUSTMENT. GM/MI	2.25	0.18	1.41	0.34	0.39	0.44	0.13	0.68	0.92	0.00	0.24	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.35	7.58	12.36	9.41	6.61	6.30	6.85	12.94	6.17	9.26	6.34
ADJUSTMENT FACTOR, % INCREASE	18.8%	2.9%	22.8%	2.9%	4.3%	7.2%	2.1%	11.1%	7.7%	0.0%	2.7%	2.7%

TABLE M-11. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE D SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HR	HRBR-3 M	HRBR-4 M	HRBR-5 ADELIN-1	10 - 1	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	006	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	5	ည	36	72	2	31	17	2	5	വ	2	23
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.92	98.95	98.92	98.92	98.95	98.95	98.95	98.95	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ОЛТРИТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	25.92
REQUIRED EXTRA IDLE SECONDS	00.00	0.00	9.08	63.05	3.13	20.25	6.25	3.13	0.00	1.65	0.00	0.08
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.55	22.59	0.89	6.04	1.86	0.89	0.00	0.26	0.00	0.01
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.57	34.61	7.06	18.06	13.88	7.06	6.17	6.43	6.17	12.03
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	6.1%	187.9%	14.4%	50.2%	15.5%	14.4%	0.0%	4.2%	0.0%	0.1%

TABLE M-12. VEHICLE TRAVEL TIME PATTERNS AND OPERATING MODES FOR VISION 2000 ALTERNATIVES IN 2010

	PORTION			DI	STRIBUTIO	OF TRAVI	EL BY TRI	P DURATIO	N INTERVA	LS		
TRIP TYPE	OF TOTAL TRIPS	UNDER 8 MINUTES	8 - 10 MINUTES	10 - 15 MINUTES		20 - 25 MINUTES	25 - 30 MINUTES	30 - 35 MINUTES	35 - 40 MINUTES	40 - 45 MINUTES	45 - 50 MINUTES	50 - 120 MINUTES
H-W	40.00%	10.00%	5.00%	15.00%	20.00%	15.00%	10.00%	5.00%	5.00%	5.00%	5.00%	5.00%
H-S	0.00%	35.00%	25.00%	15.00%	12.00%	6.00%	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%
H-0	5.00%	20.00%	20.00%	25.00%	15.00%	10.00%	5.00%	1.00%	1.00%	1.00%	1.00%	1.00%
0-W	50.00%	15.00%	10.00%	15.00%	20.00%	10.00%	10.00%	5.00%	5.00%	3.00%	3.00%	4.00%
0-0	5.00%	17.50%	20.00%	25.00%	15.00%	10.00%	5.00%	2.50%	1.00%	1.00%	1.00%	2.00%
INT TRK	0.00%	85.00%	10.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
REG TRK	0.00%	5.00%	5.00%	5.00%	10.00%	20.00%	20.00%	10.00%	10.00%	5.00%	5.00%	5.00%
EXT TRK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	80.00%
SUM/MEAN	100.00%	13.38%	9.00%	16.00%	19.50%	12.00%	9.50%	4.68%	4.60%	3.60%	3.60%	4.15%

CUMULATIVE TRIP OPERATING MODES (FOR TOTAL EMISSIONS ANALYSES):

	MEAN	MEAN	MEAN	MEAN	NONCAT NONCAT CATALYST CATALYST
	TRAVEL	COLD	HOT	HOT	COLD HOT COLD HOT
TRIP	TIME	START	START	STABLE	START START START START
TYPE	(MINUTES)	MODE	MODE	MODE	MODE MODE MODE MODE
•••••					
H-W	24.75	44.52%	3.61%	51.86%	38.53% 9.61% 44.59% 3.55%
H-S	12.50	41.31%	37.10%	21.59%	26.35% 52.06% 41.47% 36.94%
H-0	14.73	47.21%	22.13%	30.66%	30.08% 39.26% 47.39% 21.95%
0-W	21.70	34.39%	20.72%	44.89%	22.45% 32.66% 34.52% 20.59%
0-0	15.93	19.31%	48.03%	32.66%	5.56% 61.79% 19.46% 47.88%
INT TRK	6.20	76.32%	21.51%	2.17%	59.33% 38.50% 76.51% 21.32%
REG TRK	28.85	26.87%	12.03%	61.11%	19.70% 19.19% 26.95% 11.95%
EXT TRK	77.50	8.21%	4.59%	87.19%	5.11% 7.70% 8.25% 4.56%
MEANS	22.28	38.33%	15.31%	46.36%	28.42% 25.23% 38.44% 15.21%

TABLE M-13. PORT OF OAKLAND/FISCO EMPLOYEE COMMUTE TRAVEL PATTERNS

RESIDENCY	EMPLOYEE TRIPS	PERCENT OF TRIPS	BAY AREA DISTANCE (MILES)	BAY AREA MILEAGE INCREMENT
OAKLAND/PIEDMONT ALAMEDA BERKELEY/ALBANY/EMERYVILLE SAN LEANDRO/SAN LORENZO HAYWARD/CASTRO VALLEY UNION CITY FREMONT/NEWARK DUBLIN/LIVERMORE/PLEASANTON SAN PABLO/PINOLE/RODEO RICHMOND/EL CERRITO PITTSBURG/ANTIOCH CONCORD/MARTINEZ ORINDA/LAFAYETTE/WALNUT CREEK ALAMO/DANVILLE/SAN RAMON SAN FRANCISCO SAN FRANCISCO SAN FRANCISCO LONGSHORE TRIPS SAN MATEO COUNTY SANTA CLARA COUNTY MARIN COUNTY NAPA/SONOMA COUNTIES SOLANO COUNTY	683 24 22 89 235 23 38 23 43 157 114 28 8 5 111 112 138 82 15 34 236	30.77% 1.08% 0.99% 4.01% 10.59% 1.04% 1.71% 1.04% 7.07% 5.14% 1.26% 0.36% 0.23% 5.00% 5.05% 6.22% 3.69% 0.68% 1.53% 10.63%	5.05 5.92 6.51 14.20 20.12 21.90 24.86 31.96 14.20 10.06 27.23 24.86 15.39 24.86 13.02 13.02 21.31 66.29 22.49 43.80 36.70	1.55 0.06 0.06 0.57 2.13 0.23 0.43 0.33 0.28 0.71 1.40 0.31 0.06 0.06 0.65 0.65 0.66 1.32 2.45 0.15 0.67
TOTALS	2,220	100.00%		17.98

Notes: Residency distribution data provided by Dowling Associates.
All distances estimated by map-measurer tracing of higway routes on a 1:36,750 scale map for Oakland, and 1:150,000 scale maps for other locations.

TABLE M-14. PORT OF OAKLAND TRUCK TRAVEL PATTERNS WITHIN THE BAAQMD

DESTINATION	TRUCK TRIPS	PERCENT OF TRIPS	BAY AREA DISTANCE (MILES)	BAY AREA MILEAGE INCREMENT
OAKLAND ALAMEDA BERKELEY/ALBANY/EMERYVILLE SAN LEANDRO/SAN LORENZO HAYWARD/CASTRO VALLEY UNION CITY FREMONT/NEWARK DUBLIN/LIVERMORE/PLEASANTON SAN PABLO/PINOLE/RODEO RICHMOND PITTSBURG/ANTIOCH CONCORD/MARTINEZ ALAMO/DANVILLE/SAN RAMON SAN FRANCISCO SAN MATEO COUNTY SANTA CLARA COUNTY MARIN COUNTY NAPA/SONOMA COUNTIES SOLANO COUNTY SACRAMENTO AREA SAN JOAQUIN/STANISLAUS COUNTIES FRESNO/MERCED/MADERA COUNTIES KERN/KINGS/TULARE COUNTIES SANTA CRUZ COUNTY OTHER CALIFORNIA OTHER STATES	892 11 15 103 95 43 35 5 17 209 19 20 5 165 57 136 8 34 61 165 227 164 20 7 105 101	32.81% 0.40% 0.55% 3.79% 3.49% 1.58% 1.29% 0.18% 0.63% 7.69% 0.70% 0.74% 0.18% 6.07% 2.10% 5.00% 0.29% 1.25% 2.24% 6.07% 8.35% 6.03% 0.74% 0.26% 3.86% 3.71%	6.51 5.92 6.51 14.20 20.12 21.90 24.86 31.96 14.20 10.06 27.23 24.86 24.86 13.02 21.31 66.29 22.49 43.80 36.70 49.72 45.57 45.57 45.57 45.57 49.72	2.14 0.02 0.04 0.54 0.70 0.35 0.32 0.06 0.09 0.77 0.19 0.18 0.05 0.79 0.45 3.32 0.07 0.55 0.82 3.02 3.80 2.75 0.34 0.14 1.76 1.85
TOTALS	2,719	100.00%		25.09
BAY AREA SUBTOTAL: SACRAMENTO: SAN JOAQUIN VALLEY: CENTRAL COAST: OTHER CALIFORNIA: OTHER STATES:		70.98% 6.07% 15.12% 0.26% 3.86% 3.71%		16.11 49.72 45.57 55.63 45.57 49.72

Notes: Truck travel patterns from Port of Oakland 1993 truck survey. All distances estimated by map-measurer tracing of higway routes on 1:150,000 scale maps.

TABLE M·15. SUMMER REACTIVE ORGANIC COMPOUND AND NITROGEN OXIDE EMISSION RATES FOR 2010

	i F	Exhaust ROG	Exhaust ROG Emission Rates	$\overline{}$	grams/mile) by Speed (mph)	(wbh)	Hot Soak	Other Evap	Exhaust NOx	Exhaust NOx Emission Rates (grams/mile) by Speed (mph)	es (grams/mi	le) by Speed	(mph)
Land Use	Purpose	15	25	35	45	55	(grams/trip)	(gm/veh-day)	15	25	35	45	55
c	=	77 0	00	76 0	PG 0	36.0	16.0	1 21	13 0	0.42	0.41	97.0	0 62
8	# X	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	₩.0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
	М-0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.45	0.41	0.48	0.61
	0-0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
FISCO AREAS 4 & 5	N-H	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	0-н	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
	м-0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	0.0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
IIT ARFA	3:	0.44	0.30	0.27	0.24	0.25	0.21	1,21	0.51	0.42	0.41	0.48	0.62
	K-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	н-0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
	M-0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	0.0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
CDD TEDUTARI	3	77	0 30	76 0	0.24	0.25	0 21	1 21	15 0	0 42	0 41	0 48	0.62
JUNE I ENGLISHE	s.÷	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	н-0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	.0.53	99.0
	M-0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	0.0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
UP RAIL TERMINAL	H-H	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H·S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	н-0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
	M-0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	0-0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61

TABLE M-15. SUMMER REACTIVE ORGANIC COMPOUND AND NITROGEN OXIDE EMISSION RATES FOR 2010

		Exhaust ROG	Emission Rate	es (grams/mil	Exhaust ROG Emission Rates (grams/mile) by Speed (mph)	(mph)	Hot Soak	Other Evap	Exhaust NOx	Exhaust NOx Emission Rates (grams/mile) by Speed (mph)	es (grams/mi	le) by Speed	(mph)
Land Use	Purpose	pose 15	25	35	45	52	(grams/trip)	(gm/veh-day)	15	25	35	45	55
MARINE TERMINAL AREAS	* ±	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	H·0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
	M·0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	0-0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
ON-SITE TRUCK TRIPS	0-0	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
BAY AREA TRUCK TRIPS	0-0	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
LONG DISTANCE TRUCK TRIPS	0.0	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
PORT OF RICHMOND TRUCKS	0.0	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87

Notes: ROG = reactive organic compounds

N0x = nitrogen oxides

H-W = home - work trips

H-S = home - shopping trips

H-O = home - other trips

0-W = other - work trips

0.0 = other . other trips

Emission rates for California vehicles were calculated for 2010 using the California Air Resources Board EMFAC7F computer program for exhaust emission rates, with diurnal and resting loss emissions calculated using data from the EMFAC7F model and calculation procedures presented in documentation reports for the EMFAC7EP and BURDEN7C models (California Air Resources Board 1991, 1992, 1993).

Exhaust emission rates are based on an air temperature of 70 degrees Fahrenheit; diurnal emission rates are based on a summer day temperature profile (55-80 degree Fahrenheit range).

Exhaust emission rates incorporate cold start and hot start rate increments based on aggregate start mode travel fractions calculated from assumed trip-type travel time frequency distributions.

Emission rates for employment-based traffic includes only passenger vehicles.

Emission rates for internal and external truck traffic includes only heavy trucks (95% diesel, 5% gasoline).

TABLE M-16. VEHICLE-RELATED PH10 AND SUMMER/WINTER CARBON MONOXIDE EMISSION RATES FOR 2010

		Exhaust	Entrained	Summer CC	Summer CO Emission Rates (gm/mi) by Speed (mph)	tes (gm/mi)	by Speed (mpl	-	Winter C	O Emission R	Winter CO Emission Rates (gm/mi) by Speed (mph)	by Speed (m	oh)
Land Use	Tr1p Purpose	PM10 Rate (gm/mile)	PM10 Kate (gm/mile)	15	25	35	45	55	15	25	35	45	55
ETSCO ADEAS 1 2 & 3	я-н	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
î	: S-±	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-0	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	M·0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0.0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
FISCO AREAS 4 & 5	÷	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-0	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	M-0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
JIT AREA	M-H	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H∙S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	Н-0	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	M-0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0.0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
SPRR TERMINAL	3. H	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-0		3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	M-0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
UP RAIL TERMINAL	**	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H∙S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	0·H	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	M·0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63

TABLE M-16. VEHICLE-RELATED PH10 AND SUMMER/WINTER CARBON MONOXIDE EMISSION RATES FOR 2010

		Exhaust	!!	Summer CO	Summer CO Emission Rates (gm/mi) by Speed (mph)	tes (gm/mi).t	y Speed (mph	(1	Winter C	Winter CO Emission Rates (gm/mi) by Speed (mph)	ates (gm/mi)	by Speed (m	(ho
Land Use	Trip Purpose	Trip PM10 Rate PM10 Rate Purpose (gm/mile) (gm/mile)	PM10 Rate (gm/mile)	15	25	35	45	55	15	25	35	45	55
												:	
MARINE TERMINAL AREAS	H.	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	S-# #-	0.01	3.10 3.10	5.24	4.12	3.68 3.81	3.53 3.66	3.85 3.98	6.69	5.24 5.46	4.74	4.79	4.33 5.14
	· · · · · ·	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
ON-SITE TRUCK TRIPS	0-0	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
BAY AREA TRUCK TRIPS	0-0	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
LONG DISTANCE TRUCK TRIPS	0-0	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
PORT OF RICHMOND TRUCKS	0-0	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60

Notes: PM10 = inhalable particulate matter

CO = carbon monoxide

H·W = home · work trips

H.S = home - shopping trips

H-O = home - other trips

0-W = other - work trips

0.0 = other - other trips

Emission rates for California vehicles calculated for 2010 using the California Air Resources Board EMFAC7F computer program.

Entrained PMIO emission rates include tire wear plus 2.9 grams/VMT of resuspended paved roadway dust.

Summer CO emission rates based on an air temperature of 70 degrees Fahrenheit; winter CO emission rates based on an air temperature of 50 degrees Fahrenheit.

Exhaust emission rates incorporate cold start and hot start rate increments based on aggregate start mode travel fractions calculated from assumed trip-type travel time frequency distributions.

Emission rates for employment-based traffic includes only passenger vehicles.

Emission rates for internal and external truck traffic includes only heavy trucks (95% diesel, 5% gasoline).

TABLE M-17. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, NO ACTION ALTERNATIVE

500 EMPLOYEES 3.50 0.6 10x 90x 1,750 0x 0 1,750	Trip Estia	Trip Estimate Basis	Base Trip Generation Rate	Base Trip Vehicle F Generation Generation ··· Rate Rate P	%A Tri	p Rate Splits	Base Trip Volume	<pre>% Productions W Internal Destinations</pre>	Productions Number of W Internal Internal Trip Destinations Productions	Number of # Attractions ernal Trip W Internal oductions Origins	ttractions Number of W Internal Internal Trip Origins Attractions	Int.	ernal/ Net cernal Trips Trips Generated	Trip Rate Adjusted Adjustment Trip Rate Factor	Trip Rate Adjustment Factor
3.50 0.6 10.7 0.4 17.50 0.7 17.50 17.50 3.5 3.50 0.6 10.4 0.0 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>															
3.50 0.6 104 904 700 04 04 04 04 04 06 700 700 700 3.5 3.50 0.0 10 90 0	200	EMPLOYEES	3.50	9.0	101	* 06	1,750	*0	0	*0	0	1,750	1,750		0.0
0.00 0.0 <td>200</td> <td>EMPLOYEES</td> <td>3.50</td> <td>9.0</td> <td>10%</td> <td>\$06</td> <td>700</td> <td>*0</td> <td>0</td> <td>*0</td> <td>0</td> <td>700</td> <td>700</td> <td>3.5</td> <td>0.0</td>	200	EMPLOYEES	3.50	9.0	10%	\$ 06	700	*0	0	* 0	0	700	700	3.5	0.0
3.50 0.6 10\$ 90\$ 0\$ 0\$ 0\$ 455 455 3.5 3.50 0.6 10\$ 90\$ 0\$ 0\$ 0\$ 0\$ 287 287 3.5 3.50 0.6 10\$ 90\$ 6.423 0\$ 0\$ 0\$ 0\$ 287 0.7 3.5 20.33 0.0 50\$ 50\$ 0\$ 0\$ 0\$ 0.0 0\$ 0.0	0	EMPLOYEES	0.00	0.0	101	\$06	0	X 0	0	*0	0	0	0	0.0	0.0
3.50 0.6 10‡ 90‡ 287 04 05 05 287 287 3.5 3.50 0.6 10‡ 90‡ 6,423 04 0 0 0 6,423 6,423 3.5 1.26 0.0 50‡ 50‡ 589 0 0 0 0 6,423 6,423 3.5 20.93 0.0 50‡ 50‡ 6,423 0 0 6,423 6,423 3.5 3.5 20.93 0.0 50‡ 50‡ 9,815 0 0 9,815 9,815 20.9 1.3 8.57 0.0 50‡ 50‡ 4,021 0 0 4,021 4,021 8.6 9.81 8.6 9.05 0.0 50‡ 50‡ 23 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>130</td> <td>EMPLOYEES</td> <td>3.50</td> <td>9.0</td> <td>101</td> <td>\$06</td> <td>455</td> <td>*0</td> <td>0</td> <td>*0</td> <td>0</td> <td>455</td> <td>455</td> <td>3.5</td> <td>0.0</td>	130	EMPLOYEES	3.50	9.0	101	\$ 06	455	*0	0	*0	0	455	455	3.5	0.0
3.50 0.6 10\$ 90\$ 6,423 0\$ 6,423 6,423 6,423 6,52 3.5 1.26 0.0 50\$ 50\$ 60\$ 0\$ 0\$ 0\$ 6,423 6,423 6,53 3.5 20.93 0.0 50\$ 50\$ 6,42 0 6,835 0 6,835 1.3 8.57 0.0 50\$ 50\$ 6,915 0 0 6,915 9,815 20.9 9.05 0.0 50\$ 50\$ 4,021 0 0 4,021 4,021 8.6 9.05 0.0 50\$ 50\$ 23 0 <td>85</td> <td>EMPLOYEES</td> <td>3.50</td> <td>9.0</td> <td>10\$</td> <td>\$06</td> <td>287</td> <td>*0</td> <td>0</td> <td>*0</td> <td>0</td> <td>287</td> <td>287</td> <td>3.5</td> <td>0.0</td>	85	EMPLOYEES	3.50	9.0	10\$	\$ 06	287	*0	0	*0	0	287	287	3.5	0.0
ACRES 1.26 0.0 50\$ 50\$ 6\$ 6\$ 6\$ 1.3 ACRES 20.93 0.0 50\$ 50\$ 9.815 0\$ 0\$ 0\$ 6\$ 9.815 9.815 20.9 ACRES 0.0 50\$ 50\$ 4,021 0\$ 0\$ 6\$ 4,021 4,021 8.6 ACRES 0.05 0.0 50\$ 50\$ 0\$ 0\$ 23 23 0.0 ACRES 0.05 0.0 50\$ 50\$ 0 0 73 0 0 0	1,835	EMPLOYEES	3.50	9.0	10%	\$06	6,423	* 0	0	* 0	0	6,423	6,423		0.0
ACRES 20.93 0.0 50\$t 9,815 9,815 9,815 9,815 20.9 ACRES 8.57 0.0 50\$t 50\$t 4,021 0\$t 0\$t 0\$t 4,021 4,021 8.6 ACRES 0.05 0.0 50\$t 50\$t 50\$t 0.0 23 23 0.0 24,063 0.0 50\$t 0.0 50\$t 0.0 53,474 24,063	469		1.26	0.0	50\$	203	289	X 0	0	*0	589	0	589	1.3	0.0
ACRES 8.57 0.0 50\$ 50\$ 50\$ 4,021 0\$ 0\$ 0\$ 0 0\$ 0 0\$ 0 0\$ 8.6 ACRES 0.05 0.0 50\$ 50\$ 50\$ 0 0 0 0\$ 0 0\$ 0 0 0 0 0 0	469	ACRES	20.93	0.0	20\$	20%	9,815	X 0	0	*0	0	9,815			0.0
ACRES 0.05 0.0 50% 50% 23 23 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	469	ACRES	8.57	0.0	20\$	50%	4,021	X 0	0	*0	0	4,021	4,021	8.6	0.0
0 589 23,474 24,063	469	ACRES	0.05	0.0	20\$	20\$	23	X 0	0	*0	0	23	23	0.0	0.0
0 589 23,474 24,063													:		:
							24,063		0		589	23,474			0.0

Notes: Average daily employee trip rates are based on data from the ITE trip generation manual (Institute of Transportation Engineers, 1991) for light industrial land uses.

Average daily truck trip rates are based on data provided by Jordan Woodman Dobson, and assume average daily trips are 80% of peak week trips.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

Production/attraction splits reflect the origin of a round trip.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

TABLE M-18. TRIP PURPOSE, TCH EFFECTS AND TRAVEL TIME DISAGGREGATIONS, NO ACTION ALTERNATIVE

			Percent	Net	<u></u>	Adjusted		Uverali	Mean Irip	hercent (Percent of Iravel lime by speed (mpn)	nme by speed	(udm)	
Asil bas I	Trin Ectimate Racic	Trip	of Net Trips	Trip Rates	Program Effect	Net Trip Rate	Net Trips Effect	TCM Effectiveness	Duration (Minutes)	15	25	35	45	55
רקום ספב	ביים ביים ביים ביים ביים ביים ביים ביים						-							
		:	4		ù T	-	9		24.75		10 Of	20 0%	25.03	40.0%
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	e c	40.04	÷ c	† \$0 10	2:1			12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		: =	* o. n	9 6	5 8	2.0	. 8		14.73	10.0%	25.0%	35.0	15.0\$	15.0\$
) a	50.05 20.05	2. E	5 701	3. 49	788		21.70	5.0\$	20.0%	20.0%	20.0%	35.0%
		0.0	5.0%	0.2	**	0.2	88		15.93	10.0%	25.0\$	35.0\$	15.0\$	15.0\$
TO A POPULAR OF THE P	SOO EMD OVERS	ä	40 0%	1.4	15.	1.2	238		24.75	5.0%	10.0%	20.0%	25.0\$	40.0%
risco aneas 4 a s		: ±	*0.0	0.0	**	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-0	5.0\$	0.2	*0	0.2	35		14.73	10.01	25.0%	35.0\$	15.0\$	15.0%
		м-0	50.0%	1.8	10%	1.6	315		21.70	5.0%	20.0%	20.0%	20.0%	35.0\$
		0-0	5.0\$	0.2	*0	0.2	35		15.93	10.01	25.0\$	35.0\$	15.0	15.0%
JIT AREA	0 EMPLOYEES	×	40.0%	0.0	15\$	0.0	0		24.75	5.0	10.01	20.0%	25.0%	40.0%
		H-S	0.0	0.0	* 0	0.0	0		12.50	10.0	30.0%	25.0%	15.0%	20.0%
		0- H	5.0%	0.0	*0	0.0	0		14.73	10.0%	25.0	35.0%	15.0%	15.0
		M-0	50.0	0.0	10%	0.0	0		21.70	5.0\$	20.0	20.0%	20.0%	35.0
		0.0	5.0\$	0.0	* 0	0.0	0		15.93	10.0%	25.0\$	35.0%	15.0%	15.0%
SPRR TERMINAL	130 EMPLOYEES	Ŧ	40.0%	1.4	15%	1.2	155		24.75	5.0\$	10.0%	20.0%	25.0%	40.0%
		H-S	0.0	0.0	X 0	0.0	0		12.50	10.0%	30.0%	25.0%	15.0\$	20.0%
		н-0	5.0%	0.2	*0	0.2	35		14.73	10.0%	25.0	35.0%	15.0%	15.0%
		M-0	50.0\$	1.8	101	1.6	205		21.70	5.0	20.0%	20.0%	20.0%	35.0
		0-0	5.0	0.2	* 0	0.2	23		15.93	10.0%	25.0	35.0%	15.0	15.0%
													;	;
UP RAIL TERMINAL	82 EMPLOYEES	¥	40.0%	1.4	15%	1.2	86		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		н·S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0%	25.0	15.0%	20.0%
		H-0	5.0\$	0.2	*0	0.2	14		14.73	10.0%	25.0%	35.0%	15.0%	15.0\$
		M· 0	50.0\$	1.8	10%	1.6	129		21.70	5.0%	20.0%	20.0%	20.0%	35.0
		0-0	5.0	0.2	*0	0.2	14		15.93	10.0%	25.0	35.0\$	15.0%	15.0

TABLE M-18. TRIP PURPOSE, TOM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, NO ACTION ALTERNATIVE

		Trio	Percent Trio of Net	Net	TCM	Adjusted Net	Adjusted Overall		Mean Trip Duration	Percent c	of Travel T	Percent of Travel Time by Speed (mph)	d (mph)	
Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate	Effec		(Minutes)	15	25	35	45	55
MARINE TERMINAL AREAS	1,835 EMPLOYEES	¥	40.0	1.4	15%	1.2	2,184		24.75	2.03	10.0%	20.0%	25.0%	40.0%
		H-S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0%	25.01	15.0%	20.0%
		H-0	5.0%	0.2	* 0	0.2	321		14.73	10.0%	25.0%	35.0%	15.0%	15.0\$
		M -0	\$0.0\$	1.8	101	1.6	2,890		21.70	5.0	20.0%	20.0%	20.0%	35.0\$
		0-0	5.0%	0.2	*0	0.2	321		15.93	10.01	25.0%	35.0\$	15.0%	15.0\$
ON-SITE TRUCK TRIPS	469 ACRES	0-0	100.0\$	1.3	*0	1.3	589		6.20	75.0\$	20.0\$	5.0\$	0.0	\$0.0
BAY AREA TRUCK TRIPS	469 ACRES	0-0	100.0%	20.9	*0	20.9	9,815		28.85	15.0\$	25.0\$	30.0	20.0%	10.0
LONG DISTANCE TRUCK TRIPS	PS 469 ACRES	0-0	100.0%	8.6	* 0	8.6	4,021		77.50	10.0%	20.0%	25.0%	25.0%	20.0%
System anomines to trace	460 ACDES	c	•	c	ż	c	5		01	10 04	* 0 00	\$0 3c	9E 04	4 0 0c
PUKI UF KICHMUND IKUCKS		0-0	100.04	9.0	5	9.0	S		70.00	10.04	*0.02	*0.62	4 0.63	*0.03
							:							
TOTALS							23,019	4.3\$						

Notes: H-W = home-work trips

M.S = home-shopping trips

H-O = home-other trips

0.W = other-work trips

0.0 = other other trips

TCM - transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE M-19. VEHICLE TRAVEL SUMMARY, NO ACTION ALTERNATIVE

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	M-H O-H M-O	595 0 88 788	24.8 12.5 14.7 21.7	17.94 7.40 8.59 14.83	10,677 0 756 11,685	43.5 35.5 35.0 41.0
FISCO AREAS 4 & 5	200 EMPLOYEES	O HHHO	238 0 35 315	15.9 24.8 12.5 14.7 21.7	9.29 17.94 7.40 8.59 14.83	818 4,271 0 301 4,671	35.0 43.5 35.5 35.0 41.0
JIT AREA	0 EMPLOYEES) ¥ ± ± 0 0	<u>,</u> 0000	24.8 12.5 14.7 21.7	9.29 17.94 7.40 8.59 14.83	322	35.0 43.5 35.5 35.0 41.0
SPRR_TERMINAL	130 EMPLOYEES	3 X O 3 O	155 0 35 205 23	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	2,781 0 301 3,040 214	43.5 35.5 35.0 41.0 35.0
UP RAIL TERMINAL	82 EMPLOYEES	# H H O O	98 0 14 129	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	1,758 0 120 1,913 130	43.5 35.5 35.0 41.0 35.0

TABLE M.19. VEHICLE TRAVEL SUMMARY, NO ACTION ALTERNATIVE

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	1,835 EMPLOYEES	M-H	2,184	24.8	17.94	39,189	43.5
		H-S	0 321	12.5 14.7	7.40 8.59	0 2,758	35.5 35.0
		M-0 0-0	2,890 321	21.7 15.9	14.83	42,854 2,983	41.0 35.0
ON-SITE TRUCK TRIPS	469 ACRES	0-0	589	6.2	1.86	1,096	18.0
BAY AREA TRUCK TRIPS	469 ACRES	0.0	9,815	28.9	16.11	158,099	33.5
LONG DISTANCE TRUCK TRIPS	469 ACRES	0-0	4,021	77.5	48.44	194,767	37.5
PORT OF RICHMOND TRUCKS	469 ACRES	0.0	23	18.0	11.25	259	37.5
TOTALS			23,019		21.10	485,765	
TOTALS BY TRIP PURPOSE:		M-H	3,270	24.8	17.94	58,676	43.5
		H-S	0	0.0	0.00	0	0.0
		н-0	493	14.8	8.59	4,236	34.9
		M-0	4,327	21.7	14.83	64,162	41.0
		0.0	14,929	40.6	24.03	358,690	35.5
			23,019	34.3	21.10	485,765	37.0

Notes:

H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
WMT = vehicle miles traveled

TABLE M-20. SUMWARY OF WHT AND TRAFFIC-RELATED VEHICLE EMISSIONS, NO ACTION ALTERNATIVE

i and Ilco	Trin Ectimate Bacto	Trip	Average Distance	VMT by	Exhaust ROG Rate	Exhaust NOx Rate	Total PM10 Emission Rate	Summer CO Rate	Winter CO Rate	ROG Emissions (lbs/dav)	ROG NOX PM10 Emissions Emissions Emissions (The/day) (The/day) (The/day)	PM10 Emissions	Summer CO Emissions	Winter CO Emissions (The/day)
		-												
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	¥:	17.94	10,677	0.26	0.54	3.11	3.61	4.68	9.9	12.6	73.2	85.0	110.1
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-¥	8.59	756	0.29	0.53	3.11	3.97	5.13	9.0	0.9	5.2	9.9	8.6
		¾- 0	14.83	11,685	0.23	0.52	3.11	3.34	4.25	6.7	13.5	80.1	86.0	109.5
		0.0	9.29	818	0.21	0.47	3.11	2.94	3.61	0.4	0.9	5.6	5.3	6.5
FISCO AREAS 4 & 5	200 EMPLOYEES	ž	17.94	4,271	0.26	0.54	3.11	3.61	4.68	2.6	5.0	29.3	34.0	44.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-н	8.59	301	0.29	0.53	3.11	3.97	5.13	0.2	0.3	2.1	2.6	3.4
		M-0	14.83	4,671	0.23	0.52	3.11	3.34	4.25	2.7	5.4	32.0	34.4	43.8
		0.0	9.29	325	0.21	0.47	3.11	2.94	3.61	0.2	0.3	2.2	2.1	2.6
JIT AREA	0 EMPLOYEES	Ŧ	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		Н-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		4.0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
SPRR TERMINAL	130 EMPLOYEES	¥-£	17.94	2,781	0.26	0.54	3.11	3.61	4.68	1.7	3.3	19.1	22.1	28.7
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H∙0	8.59	301	0.29	0.53	3.11	3.97	5.13	0.2	0.3	2.1	2.6	3.4
		M -0	14.83	3,040	0.23	0.52	3.11	3.34	4.25	1.7	3.5	20.8	22.4	28.5
		0-0	9.29	214	0.21	0.47	3.11	2.94	3.61	0.1	0.2	1.5	1.4	1.7
UP RAIL TERMINAL	82 EMPLOYEES	ž	17.94	1,758	0.26	0.54	3.11	3.61	4.68	1.1	2.1	12.1	14.0	18.1
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		Н-0	8.59	120	0.29	0.53	3.11	3.97	5.13	0.1	0.1	0.8	1.1	1.4
		# ∙0	14.83	1,913	0.23	0.52	3.11	3.34	4.25	1.1	2.2	13.1	14.1	17.9
		0-0	9.29	130	0.21	0.47	3.11	2.94	3.61	0.1	0.1	0.0	0.8	1.0

TABLE M-20. SUMMARY OF WHT AND TRAFFIC-RELATED VEHICLE EMISSIONS, NO ACTION ALTERNATIVE

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (1bs/day)	ROG NOX PM10 Summer CO Winter CO Emissions Emissions Emissions Emissions (1bs/day) (1bs/day) (1bs/day) (1bs/day)	PM10 Emissions (1bs/day)	PM10 Summer CO Winter CO sions Emissions (1bs/day) (1bs/day)	Winter CO Emissions (1bs/day)
MARINE TERMINAL AREAS	1. 835 EMPLOYEES	÷	17.94	39,189	0.26	0.54	3.11	3.61	4.68	24.0	46.3	268.6	311.8	404.1
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	2,758	0.29	0.53	3.11	3.97	5.13	2.1	3.2	18.9	24.1	31.2
		4-0	14.83	42,854	0.23	0.52	3.11	3.34	4.25	24.5	49.4	293.7	315.6	401.4
		0-0	9.29	2,983	0.21	0.47	3.11	2.94	3.61	1.6	3.1	20.4	19.3	23.8
ON-SITE TRUCK TRIPS	469 ACRES	0-0	1.86	1,096	2.97	11.14	4.53	14.32	14.42	7.2	26.9	10.9	34.6	34.8
BAY AREA TRUCK TRIPS	469 ACRES	0.0	16.11	158,099	1.82	10.46	4.53	8.15	8.21	635.5	3,644.6	1,577.5	2,840.5	2,860.2
LONG DISTANCE TRUCK TRIPS	s 469 ACRES	0-0	48.44	194,767	1.67	10.84	4.53	7.59	7.64	731.3	4,653.0	1,943.4	3,259.5	3,282.5
PORT OF RICHMOND TRUCKS	469 ACRES	0-0	11.25	259	1.67	10.84	4.53	7.59	7,64	1.0	6.2	2.6	4.3	4.4
TOTALS			21.10	485,765						1,453.3	8,483.6	4,436.1	7,144.3	7,471.5

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for residential and nonresidential land uses.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE M-21. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, NO ACTION ALTERNATIVE AND EMISSION RATES FOR 2010

		Net [Net Daily Vehicle Trip Generation			Average Summer Day Traffic.Related Ozone Precursor Emissions (pounds per day)		Average Daily Exhaust Plus Entrained	Average Daily Traffic- Related Carbon Monoxide Emissions (pounds per day)	/ Traffic- I Monoxide IS
	Amount of	Internal	External	Total	Daily VMT			spunod)		
Land Use	Development	Trips	Trips	Trips	Estimate	R0G	NOX	per day)	Summer	Winter
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	0	1,559	1,559	23,935	14.2	27.8	164.1	182.9	234.6
FISCO AREAS 4 & 5	200 EMPLOYEES	0	623	623	9,568	5.7	11.1	9.59	73.1	93.8
JIT AREA	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
SPRR TERMINAL	130 EMPLOYEES	0	418	418	6,336	3.8	7.4	43.4	48.5	62.3
UP RAIL TERMINAL	82 EMPLOYEES	0	255	255	3,922	2.3	4.6	26.9	30.0	38.4
MARINE TERMINAL AREAS	1,835 EMPLOYEES	0	5,716	5,716	87,784	52.3	102.0	601.7	8.079	860.5
ON-SITE TRUCK TRIPS	469 ACRES	589	0	289	1,096	7.2	26.9	10.9	34.6	34.8
BAY AREA TRUCK TRIPS	469 ACRES	0	9,815	9,815	158,099	635.5	3,644.6	1,577.5	2,840.5	2,860.2
LONG DISTANCE TRUCK TRIPS	469 ACRES	0	4,021	4,021	194,767	731.3	4,653.0	1,943.4	3,259.5	3,282.5
PORT OF RICHMOND TRUCKS	469 ACRES	0	23	23	259	1.0	6.2	2.6	4.3	4.4
									:	
Autos		0	8,571	8,571	131,544	78.3	152.9	901.7	1,005.3	1,289.6
Trucks		589	13,859	14,448	354,221	1,375.0	8,330.7	3,534.5	6,139.0	6,181.9
Total		589	22,430	23,019	485,765	1,453.3	8,483.6	4,436.1	7,144.3	7,471.5

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds NOx = nitrogen oxides PM10 = inhalable particulate matter

TABLE M-22. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, NO ACTION ALTERNATIVE

	Annual			imated Ann Tons Per Y			
Land Use	Vehicle Trips	Annual VMT	ROG	NOx	CO	S0x	PM10
FISCO AREAS 1, 2, & 3	389,750	5,983,784	1.78	3.48	25.02	0.20	20.51
FISCO AREAS 4 & 5	155,750	2,391,878	0.71	1.39	10.00	0.08	8.20
JIT AREA	0	0	0.00	0.00	0.00	0.00	0.00
SPRR TERMINAL	104,500	1,583,889	0.47	0.92	6.64	0.05	5.43
UP RAIL TERMINAL	63,750	980,433	0.29	0.57	4.10	0.03	3.36
MARINE TERMINAL AREAS	1,429,000	21,946,030	6.53	12.75	91.76	0.73	75.21
ON-SITE TRUCK TRIPS	147,250	273,885	0.90	3.36	4.33	0.19	1.37
BAY AREA TRUCK TRIPS	2,453,750	39,524,801	79.44	455.57	355.88	27.88	197.19
LONG DISTANCE TRUCK TRIPS	1,005,250	48,691,797	91.42	581.63	408.40	34.35	242.93
PORT OF RICHMOND TRUCKS	5,750	64,688	0.12	0.77	0.54	0.05	0.32
							• • • • • • •
Autos	2,142,750	32,886,014		19.1	137.5	1.1	112.7
Trucks	3,612,000	88,555,170	171.9	1,041.3	769.2	62.5	441.8
Total	5,754,750	121,441,184	181.7	1,060.4	906.7	63.6	554.5

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03~grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64~grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE M-23. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE A

lon	and Contraction of the Free financial Co	1	Base Trip Vehicle F Generation Generation	Vehicle meration -	nicle P/A Trip Rate Splits ition	Splits	Base Trip	* Productions Number of Base Trip ' W Internal Internal Trip Volume Destinations Productions	Number of Internal Trip Productions	Number of # Attractions ernal Trip W Internal	Attractions Number of Internal/ W Internal Internal Trip External	Internal/ External Trips	rnal/ Net ernal Trips Trips Generated	Adjusted Trio Rate	Trip Rate Adjustment Factor
Category	וף בארוווומרם נ	51 CB0	Vacc												
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	OYEES	0.00	0.0	10\$	* 06	0	*0	0	* 0	0	0	0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	OYEES	0.00	0.0	10%	\$ 06	0	*0	0	*0	0	0	0	0.0	0.0
JIT AREA	360 EMPLOYEES	OYEES	3.50	9.0	101	\$ 06	1,260	*0	0	*0	0	1,260	1,260	3.5	0.0
SPRR TERMINAL	0 EMPLOYEES	OYEES	0.00	0.0	10\$	\$ 06	0	*0	0	*0	0	0	0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	OYEES	0.00	0.0	10\$	\$ 06	0	*0	0	*0	0	0	0	0.0	0.0
MARINE TERMINAL AREAS	2,853 EMPLOYEES	OYEES	3.50	9.0	10%	\$ 06	986.6	*0	0	*0	0	986'6	986'6	3.5	0.0
ON-SITE TRUCK TRIPS	729 ACR	ACRES	8.12	0.0	50\$	203	5,916	*0	0	*0	5,916	0	5,916	8.1	0.0
BAY AREA TRUCK TRIPS	729 ACR	ACRES	14.84	0.0	203	20\$	10,816	*0	0	*0	0	10,816	10,816	14.8	0.0
LONG DISTANCE TRUCK TRIPS	729 ACR	ACRES	6.08	0.0	20%	203	4,431	*0	0	*0	0	4,431	4,431	6.1	0.0
											:	:	:		:
TOTALS							32,409		0		5,916	26,493	32,409		0.0%

Notes: Average daily employee trip rates are based on data from the ITE trip generation manual (Institute of Transportation Engineers, 1991) for light industrial land uses.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area. Average daily truck trip rates are based on data provided by Jordan Woodman Dobson, and assume average daily trips are 80% of peak week trips.

Production/attraction splits reflect the origin of a round trip.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

TABLE M-24. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE A

			Percent	Net	TCM	Adjusted	Adjusted	Overall	Mean Trip	Percent	of Travel T	Percent of Travel Time by Speed (mph)	(mph)	
Land Use	Trip Estimate Basis	Trip Purpose	of Net Trips	Trip Rates	Program Effect	Net Trip Rate	net Trips	ICM Effectiveness	Duration	15	25	35	45	55
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	40.0\$	0.0	15\$	0.0	0		24.75	5.0%	10.01	20.0%	25.0%	40.0%
		H-S	\$0.0	0.0	*0	0.0	0		12.50	10.0%	30.0%	25.0%	15.0	20.0%
		6-Н	5.0\$	0.0	*0	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0
		* -0	50.0\$	0.0	10\$	0.0	0		21.70	5.01	20.0%	20.0%	20.0%	35.0%
		0-0	5.0%	0.0	X 0	0.0	0		15.93	10.01	25.0%	35.0\$	15.0%	15.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	±	40.0%	0.0	15%	0.0	0		24.75	5.0%	10.0\$	20.0%	25.0%	40.0%
		Н·S	0.0	0.0	*0	0.0	0		12.50	10.0%	30.0%	25.0	15.0%	20.0%
		н-0	5.0%	0.0	*	0.0	0		14.73	10.0	25.0	35.0\$	15.0\$	15.0
		M-0	50.0%	0.0	101	0.0	0		21.70	5.0\$	20.0%	20.0%	20.0%	35.0
		0-0	5.0\$	0.0	*0	0.0	0		15.93	10.0	25.0%	35.0\$	15.0\$	15.0%
NT ADEA	360 EMPLOYEES	3	40.0	1.4	15*	1.2	428		24.75	5.0\$	10.0%	20.0%	25.0\$	40.0%
סוו שורט		: ¥	0.0	0.0	*0	0.0	0		12.50	10.0%	30.0	25.0	15.0	20.0%
		н-0	5.0	0.2	\$ 0	0.2	0		14.73	10.01	25.0%	35.0%	15.0%	15.0%
		M-0	\$0.0\$	1.8	101	1.6	292		21.70	5.0	20.0%	20.0%	20.0%	35.0%
		0-0	5.0	0.2	\$0	0.2	63		15.93	10.01	25.0%	35.0\$	15.0\$	15.0%
MULINALL GOOD	S EMDI OVEES	3	40 0%	0.0	15%	0.0	0		24.75	5.0	10.0%	20.0%	25.0%	40.0%
STAN TENTINAL		· ·÷	0.0	0.0	*0	0.0	0		12.50	10.01	30.0%	25.0%	15.0%	20.0%
		н-0	5.0\$	0.0	* 0	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0
		M-0	20.0%	0.0	101	0.0	0		21.70	5.0\$	20.0%	20.0%	20.0%	35.0\$
		0.0	5.0\$	0.0	*0	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
UP RAIL TERMINAL	0 EMPLOYEES	34	40.0%	0.0	15%	0.0	0		24.75	5.0\$	10.01	20.0\$	25.0%	40.0%
		H-S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0%	25.0	15.0%	20.0%
		н-0	5.0\$	0.0	*0	0.0	0		14.73	10.0	25.0	35.0	15.0%	15.0
		4.0	50.0	0.0	101	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0
		0.0	5.0%	0.0	*0	0.0	0		15.93	10.0%	25.0%	35.0%	15.0\$	15.0%

TABLE M.24. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE A

			1	Net	TCM	Adjusted	Adjusted	Overal 1	Mean Trip	Percent	of Travel T	Percent of Travel Time by Speed (mph)	1 (mph)	
Land Use	Trip Estimate Basis	Trip Purpose	of Net Trips	Trip	Program Effect	net Trip Rate	Net Trips Ef	net ICM Trips Effectiveness	Ouration (Minutes)	15	25	15 25 35 45	45	52
MARINE TERMINAL AREAS	2.853 EMPLOYEES	¥:	40.0%	1.4	15\$	1.2	3.395		24.75	5.03	10.0%	20.0\$	25.0\$	40.0%
	,	H-S	0.0	0.0	x 0	0.0	0		12.50	10.0%	30.0%	25.0	15.0%	20.0%
		0-н	5.0	0.2	*0	0.2	499		14.73	10.0%	25.0%	35.0%	15.0\$	15.0
		M-0	50.0	1.8	10%	1.6	4,494		21.70	5.0	20.0%	20.0%	20.0%	35.0\$
		0-0	5.0%	0.2	X 0	0.2	499		15.93	10.0%	25.0\$	35.0\$	15.0%	15.0\$
ON-SITE TRUCK TRIPS	729 ACRES	0-0	100.0%	8.1	*0	8.1	5,916		6.20	75.0%	20.0%	5.0\$	0.0	0.0
BAY AREA TRUCK TRIPS	729 ACRES	0.0	100.0%	14.8	X 0	14.8	10,816		28.85	15.0%	25.0%	30.0%	20.0%	10.0%
LONG DISTANCE TRUCK TRIPS	3 729 ACRES	0-0	100.0%	6.1	*0	6.1	4,431		77.50	10.0%	20.0%	25.0%	25.0%	20.0%
TOTALS							31,108	4.0%						

Notes: H-W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

0-W = other-work trips

0.0 = other-other trips

TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE M-25. VEHICLE TRAVEL SUMMARY, ALTERNATIVE A

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H H H O O	0000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	0000	43.5 35.5 35.0 41.0 35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	ж-н н-S н-О ж-О	0 0 0 0	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	0000	43.5 35.5 35.0 41.0 35.0
JIT AREA	360 EMPLOYEES	H.S.H.O.O.O.	428 0 0 567 63	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	7,680 0 0 8,408 585	43.5 35.5 35.0 41.0 35.0
SPRR TERMINAL	0 EMPLOYEES	H-S H-O-H-O O-O-O-O-O-O-O-O-O-O-O-O-O-O-O-O	0000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	0000	43.5 35.5 35.0 41.0 35.0
UP RAIL TERMINAL	0 EMPLOYEES	H H S H O O O O O	0000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	0000	43.5 35.5 35.0 41.0 35.0

TABLE M-25. VEHICLE TRAVEL SUMMARY, ALTERNATIVE A

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,853 EMPLOYEES	3.H 3.H 3.O 3.O 0.O	3,395 0 499 4,494 499	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	60,919 0 4,288 66,639 4,637	43.5 35.5 35.0 41.0
ON-SITE TRUCK TRIPS	729 ACRES	0-0	5,916	6.2	1.86	11,004	18.0
BAY AREA TRUCK TRIPS	729 ACRES	0-0	10,816	28.9	16.11	174,223	33.5
LONG DISTANCE TRUCK TRIPS	729 ACRES	0-0	4,431	77.5	48.44	214,627	37.5
TOTALS			31,108		17.78	553,009	: : : : : : :
TOTALS BY TRIP PURPOSE:		H-W H-S	3,823	24.8	17.94	68,599	43.5
		O-H -O-M	499 5,061	14.8 21.7	8.59 14.83	4,288 75,046	34.9 41.0
		0-0	21,725	32.3	18.65	405,076	34.7
			31,108	29.3	17.78	553,009	36.3

Notes:

H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
WMT = vehicle miles traveled

TABLE M-26. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE A

		Trip	Average Distance	VMT by	ROG Rate	NOx Rate	Emission Rate	CO Rate	CO Rate	Emissions	Emissions Emissions	Emissions	Emissions	Emissions
Land Use	Trip Estimate Basis	Purpose	(miles)	Category	(gm/mile)	(gm/mile)	(gm/mile)	(gm/mile)	(gm/mile)	(1bs/day)	(1bs/day)	(1bs/day)	(1bs/day)	(1bs/day)
														,
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	≱	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-Н	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		* -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	3- X	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0.0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	360 EMPLOYEES	ä	17.94	7,680	0.26	0.54	3.11	3.61	4.68	4.7	9.1	52.6	61.1	79.2
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		н.0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		1 -0	14.83	8,408	0.23	0.52	3.11	3.34	4.25	4.8	9.7	57.6	61.9	78.8
		0-0	9.29	585	0.21	0.47	3.11	2.94	3.61	0.3	9.0	4.0	3.8	4.7
SPBB TERMINAL	0 FWPI OYEES	3	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0		0.0	0.0	0.0
		Н-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0.0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	¥	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-н	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0

TABLE M-26. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE A

Land Use	Trip Estimate Basis	Trip Purpose	Average Trip Distance Purpose (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Exhaust Total PM10 NOX Rate Emission Rate gn/mile) (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	ROG NOx PM10 Emissions Emissions (1bs/day) (1bs/day)	PM10 Emissions (1bs/day)	ROG NOX PM10 Summer CO Winter CO Emissions Emissions Emissions Emissions (1bs/day) (1bs/day) (1bs/day) (1bs/day)	Winter CO Emissions (1bs/day)
MARINE TERMINAL AREAS	2,853 EMPLOYEES	3. H	17.94	60,919	0.26	0.54	3.11	3.61	4.68	37.4	71.9	417.6	484.7	628.2
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	4,288	0.29	0.53	3.11	3.97	5.13	3.2	5.0	29.4	37.5	48.5
		M-0	14.83	66,639	0.23	0.52	3.11	3.34	4.25	38.1	76.8	456.8	490.7	624.2
		0-0	9.29	4,637	0.21	0.47	3.11	2.94	3.61	2.5	4.9	31.8	30.1	36.9
ON-SITE TRUCK TRIPS	729 ACRES	0.0	1.86	11,004	2.97	11.14	4.53	14.32	14.42	72.5	270.4	109.8	347.4	349.8
BAY AREA TRUCK TRIPS	729 ACRES	0.0	16.11	174,223	1.82	10.46	4.53	8.15	8.21	700.3	4,016.3	1,738.4	3,130.2	3,151.9
LONG DISTANCE TRUCK TRIPS	729 ACRES	0.0	48.44	214,627	1.67	10.84	4.53	7.59	7.64	805.9	5,127.5	2,141.6	3,591.9	3,617.2
TOTALS			17.78	553,009						1,669.8	9,592.1	5,039.6	8,239.3	8,619.3

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for residential and nonresidential land uses.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE M-27. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE A AND EMISSION RATES FOR 2010

Am Land Use Dev		Net C Trip	let Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions (pounds per day)		Exhaust Plus Entrained PM10 Emissions	Related Carbon Monoxide Emissions (pounds per day)	Monoxide IS day)
	Amount of Development	Internal Trips	External Trips	Total Trips	Daily VMT Estimate	R0G	NOX	(pounds per day)	Summer	Winter
FISCO AREAS 1. 2. & 3	0 EMPLOYEES	• •	-		> c	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	360 EMPLOYEES	0	1.058	1,058	16,673	5. 6 8.6	19.4	114.3	126.8	162.6
SPRR TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0		0.0	0.0
AREAS	2,853 EMPLOYEES	0	8,887	8,887	136,482	81.2	158.6		1,043.0	1,337.8
	729 ACRES	5,916	0	5,916	11,004	72.5	270.4	109.8	347.4	349.8
BAY AREA TRUCK TRIPS	729 ACRES	0	10,816	10,816	174,223	700.3	4,016.3	1,738.4	3,130.2	3,151.9
LONG DISTANCE TRUCK TRIPS	729 ACRES	0	4,431	4,431	214,627	805.9	5,127.5	2,141.6	3,591.9	3,617.2
Autos		0	9,945	9,945	153,155	91.1	178.0	1,049.8	1,169.8	1,500.4
Trucks		5,916	15,247	21.163	399,854	1,578.7	9,414.1	3,989.8	7,069.5	7,118.9
Total		5,916	25,192	31,108	553,009	1,669.8	9,592.1	5,039.6	8,239.3	8,619.3

Notes: VMT = vehicle miles traveled ROG = reactive organic compounds NOX = nitrogen oxides

PM10 = inhalable particulate matter

TABLE M-28. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE A

	Annual				nual Vehic ear) For A		
Land Use	Vehicle Trips	Annual VMT	ROG	NOx	со	S0x	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	264,500	4,168,254	1.23	2.42	17.34	0.14	14.29
SPRR TERMINAL	0	Đ	0.00	0.00	0.00	0.00	0.00
UP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,221,750	34,120,544	10.15	19.82	142.66	1.13	116.94
ON-SITE TRUCK TRIPS	1,479,000	2,750,940	9.06	33.80	43.52	1.94	13.72
BAY AREA TRUCK TRIPS	2,704,000	43,555,807	87.54	502.03	392.18	30.73	217.30
LONG DISTANCE TRUCK TRIPS	1,107,750	53,656,641	100.74	640.94	450.04	37.85	267.70
Autos	2,486,250	38,288,798	11.4	22.2	160.0	1.3	131.2
Trucks	5,290,750	99,963,387	197.3	1,176.8	885.7	70.5	498.7
Total	7,777,000	138,252,186	208.7	1,199.0	1,045.7	71.8	629.9

ROG = reactive organic compounds

N0x = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of $0.03~\rm grams/vmt$ for passenger vehicles (Bay Area Air Quality Management District, 1996) and $0.64~\rm grams/vmt$ for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE M-29. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE B

Category Trip Estimate Basis		Base Trip Vehicle Reneration Generation - Rate Rate	Base Trip Vehicle P/A Trip Rate Splits Generation Generation		8 Base Trip Volume	* Productions Number of W Internal Internal Trip Destinations Productions	Productions Number of * Attractions M Internal Internal Trip W Internal Destinations Origins	* Attractions W Internal Origins	Attractions Number of Internal/ W Internal Internal Trip External Origins Attractions Trips	Internal/ External Trips	ernal/ Net ternal Trips Adjusted Trips Generated Trip Rate	•	Trip Rate djustment Factor
FISCO AREAS 1, 2, & 3 400 EMPLOYEES	s 3.50	9.0	10%	\$ 06	1,400	*0	0	*0	0	1,400	1,400	3.5	0.0%
FISCO AREAS 4 & 5 0 EMPLOYEES	s 0.00	0.0	10%	\$06	0	*0	0	* 0	0	0	0	0.0	0.0
JIT AREA 167 EMPLOYEES	3.50	9.0	10%	\$ 06	585	*0	0	*0	0	585	585	3.5	0.0%
SPRR TERMINAL 150 EMPLOYEES	3.50	9.0	10%	\$ 06	525	*0	0	*0	0	525	525	3.5	0.0%
UP RAIL TERMINAL 67 EMPLOYEES	s 3.50	9.0	10%	\$06	235	*0	0	*0	0	235	235	3.5	0.0%
MARINE TERMINAL AREAS 2,312 EMPLOYEES	s 3.50	9.0	10%	\$ 06	8,092	*0	0	*0	0	8,092	8,092	3.5	0.0%
ON-SITE TRUCK TRIPS 591 ACRES	3.91	0.0	20%	20\$	2,313	*0	0	*0	2,313	0	2,313	3.9	0.0
BAY AREA TRUCK TRIPS 591 ACRES	18.30	0.0	20 \$	20\$	10,817	*0	0	*0	0	10,817	10,817	18.3	0.0%
LONG DISTANCE TRUCK TRIPS 591 ACRES	7.50	0.0	20\$	20%	4,432	*0	0	*0	0	4,432	4,432	7.5	0.0
				:	:		:			:	:		:
TOTALS					28,399		0		2,313	26,086	28,399		0.0

Notes: Average daily employee trip rates are based on data from the ITE trip generation manual (Institute of Transportation Engineers, 1991) for light industrial land uses.

Average daily truck trip rates are based on data provided by Jordan Woodman Dobson, and assume average daily trips are 80% of peak week trips.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

Production/attraction splits reflect the origin of a round trip.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

TABLE M-30. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGREGATIONS, ALTERNATIVE B

Land Use			Percent	Net	TCM	Adjusted	Ō		Mean Trip	Percent (II II II II II II	Percent of Iravel Time by Speed (mph)	(mph)	
	Trip Estimate Basis	Trip Purpose	of Net Trips	Trip Rates	Program Effect	Net Trip Rate	Net TCM Trips Effectiveness	_	Duration	15	25	35	45	55
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	N-H	40.0%	1.4	15\$	1.2	476		24.75	5.0	10.0\$	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	*0	0.0	0		12.50	10.0%	30.0	25.0%	15.01	20.0%
		₩.0	5.0%	0.2	*0	0.2	70		14.73	10.01	25.0%	35.0%	15.0%	15.0%
		M-0	£0.0%	1.8	10%	1.6	630		21.70	5.0\$	20.0%	20.0%	20.0%	35.0\$
		0-0	5.0%	0.2	* 0	0.2	70		15.93	10.0\$	25.0%	35.0\$	15.0%	15.0
FISCO AREAS 4 & 5	0 EMPLOYEES	¥	40.0%	0.0	15\$	0.0	0		24.75	5.0\$	10.0%	20.0%	25.0\$	40.0%
		H:S	0.0	0.0	*0	0.0	0		12.50	10.0%	30.0	25.0%	15.0\$	20.0%
		Н-0	5.0%	0.0	*0	0.0	0		14.73	10.01	25.0\$	35.0\$	15.0\$	15.0%
		34. 0	£0.0%	0.0	10%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0\$
		0.0	5.0\$	0.0	\$ 0	0.0	0		15.93	10.0%	25.0\$	35.0\$	15.0%	15.0\$
.IIT ARFA	167 EMPLOYEES	÷	40.0	1.4	15\$	1.2	199		24.75	5.0\$	10.0%	20.0%	25.0%	40.0%
		H-S	0.0	0.0	*0	0.0	0		12.50	10.0%	30.0	25.0%	15.0	20.0%
		Н.0	5.0\$	0.2	* 0	0.2	0		14.73	10.0%	25.0\$	35.0\$	15.0%	15.0\$
		M-0	50.0\$	1.8	10%	1.6	263		21.70	5.0\$	20.0%	20.0%	20.0%	35.0\$
		0.0	5.0\$	0.2	*0	0.2	29		15.93	10.01	25.0%	35.0%	15.0%	15.0%
CORP TERMINAL	150 FMPI OYFFS	3	40.0%	1.4	151	1.2	179		24.75	5.0\$	10.0\$	20.0%	25.0%	40.0%
		H-S	0.0	0.0	* 0	0.0	0		12.50	10.01	30.0%	25.0	15.0	20.0%
		H:0	5.0\$	0.2	* 0	0.2	0		14.73	10.0	25.0	35.0%	15.0%	15.0\$
		* •0	50.0\$	1.8	10%	1.6	236		21.70	20.9	20.0\$	20.0%	20.0%	35.0\$
		0-0	5.0\$	0.2	* 0	0.2	26		15.93	10.0%	25.0\$	35.0%	15.0%	15.0%
UP RAIL TERMINAL	67 EMPLOYEES	¥	40.0%	1.4	151	1.2	80		24.75	5.0\$	10.0%	20.0%	25.0%	40.0%
		H-S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0\$	25.0	15.0%	20.0%
		H-0	5.0%	0.2	X 0	0.2	12		14.73	10.0\$	25.0\$	35.0\$	15.0%	15.0\$
		∄ ∙0	\$0.0\$	1.8	101	1.6	106		21.70	5.0%	20.0%	20.0	20.0%	35.0
		0-0	5.0%	0.2	X 0	0.2	12		15.93	10.0%	25.0	35.0	15.0%	15.0\$

TABLE M-30. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE B

			Percent	Net	TCM	Adjusted	Adjusted	Overal1	Mean Trip	Percent	of Travel T	Percent of Travel Time by Speed (mph)	1 (mph)	
		Trip	of Net	Trip	Program	Net	Net	TCM	Duration					
Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate	Trips E	Trips Effectiveness	(Minutes)	15	52	32	45	22
MARINE TERMINAL AREAS	2,312 EMPLOYEES	¥-±	40.0	1.4	151	1.2	2,751		24.75	5.0\$	10.0%	20.0%	25.0	40.0\$
		H-S	0.0	0.0	x 0	0.0	0		12.50	10.0%	30.0%	25.0%	15.0	20.0%
		H-0	5.0	0.2	X 0	0.2	405		14.73	10.0	25.0\$	35.0\$	15.0	15.0%
		M- 0	50.0	1.8	10%	1.6	3,641		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		0-0	5.0%	0.2	*	0.2	405		15.93	10.01	25.0%	35.0%	15.0%	15.0%
ON-SITE TRUCK TRIPS	591 ACRES	0.0	100.0%	3.9	**	3.9	2,313		6.20	75.0\$	20.0\$	5.0\$	\$0.0	0.0%
BAY AREA TRUCK TRIPS	591 ACRES	0.0	100.0%	18.3	*0	18.3	10,817		28.85	15.0%	25.0%	30.0\$	20.0%	10.0%
LONG DISTANCE TRUCK TRIPS	PS 591 ACRES	0-0	100.01	7.5	*0	7.5	4,432		77.50	10.0%	20.0%	25.0\$	25.0%	20.0%
TOTALS							27,152	4.4%						

Notes: H-W = home-work trips

H·S = home·shopping trips

H-O = home-other trips

0-W = other-work trips

0.0 = other.other trips

TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE M-31. VEHICLE TRAVEL SUMMARY, ALTERNATIVE B

LAND USE	TRIP ESTIMATE BASIS	TRIP	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	# # # # 0 3	476 0 70 630	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	8,541 0 601 9,342 650	43.5 35.5 35.0 41.0 35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	3. H. H. O. O. S. O. O. O. O. O. O. O. O. O. O. O. O. O.	0000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	0000	43.5 35.5 35.0 41.0
JIT AREA	167 EMPLOYEES	M-H H O-O	199 0 0 263 29	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	3,571 0 0 3,900 269	43.5 35.5 35.0 41.0
SPRR TERMINAL	150 EMPLOYEES	3. H H O O	179 0 0 236 26	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	3,212 0 0 3,499 242	43.5 35.5 35.0 41.0 35.0
UP RAIL TERMINAL	67 EMPLOYEES	M-H-S M-O 0-0	80 0 12 106 12	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	1,436 0 103 1,572 112	43.5 35.5 35.0 41.0 35.0

TABLE M-31. VEHICLE TRAVEL SUMMARY, ALTERNATIVE B

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,312 EMPLOYEES	3-H H	2,751	24.8	17.94	49,363	43.5 35.5
		0 3 O O . 0 O O .	405 3,641 405	14.7 21.7 15.9	8.59 14.83 9.29	3,480 53,990 3,763	35.0 41.0 35.0
ON-SITE TRUCK TRIPS	591 ACRES	0-0	2,313	6.2	1.86	4,302	18.0
BAY AREA TRUCK TRIPS	591 ACRES	0-0	10,817	28.9	16.11	174,239	33.5
LONG DISTANCE TRUCK TRIPS	591 ACRES	0-0	4,432	77.5	48.44	214,675	37.5
TOTALS		:	27,152		19.92	540,863	
TOTALS BY TRIP PURPOSE:		Σ.Υ. Σ.Υ.	3,685	24.8	17.94	66,123	43.5
		0-H	487	14.8	8.59	4,185	34.9
		M-0	4,876	21.7	14.83	72,303	41.0
		0-0	18,104	37.5	22.00	398,253	35.2
			27,152	32.5	19.92	540,863	36.8

Notes: H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
VMT = vehicle miles traveled

TABLE M-32. SUMMARY OF WHT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE B

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (1bs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (1bs/day)
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	H-H	17.94	8,541	0.26	0.54	3.11	3.61	4.68	5.2	10.1	58.5	68.0	88.1
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		н-0	8.59	601	0.29	0.53	3.11	3.97	5.13	0.4	0.7	4.1	5.3	6.8
		M· 0	14.83	9,342	0.23	0.52	3.11	3.34	4.25	5.3	10.8	64.0	68.8	87.5
		0-0	9.29	650	0.21	0.47	3.11	2.94	3.61	0.4	0.7	4.5	4.2	5.2
FISCO AREAS 4 & 5	0 EMPLOYEES	±	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-н	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	167 EMPLOYEES	÷	17.94	3,571	0.26	0.54	3.11	3.61	4.68	2.2	4.2	24.5	28.4	36.8
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0·H	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M -0	14.83	3,900	0.23	0.52	3.11	3.34	4.25	2.2	4.5	26.7	28.7	36.5
		0.0	9.29	569	0.21	0.47	3.11	2.94	3.61	0.1	0.3	1.8	1.7	2.1
		:	7		90	5	:	13.6	03 1	ć	0	6	2 30	23 1
SPRK IEKMIRAL	130 ENTLOILES	F 3	7.40	0,515	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0.H	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	3,499	0.23	0.52	3.11	3.34	4.25	2.0	4.0	24.0	25.8	32.8
		0-0	9.29	242	0.21	0.47	3.11	2.94	3.61	0.1	0.3	1.7	1.6	1.9
UP RAIL TERMINAL	67 EMPLOYEES	Ŧ	17.94	1,436	0.26	0.54	3.11	3.61	4.68	0.0	1.7	9.8	11.4	14.8
		H∙S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		н.0	8.59	103	0.29	0.53	3.11	3.97	5.13	0.1	0.1	0.7	0.9	1.2
		M-0	14.83	1,572	0.23	0.52	3.11	3.34	4.25	0.9	1.8	10.8	11.6	14.7
		0.0	9.59	112	0.21	0.47	3.11	2.94	3.61	0.1	0.1	0.8	0.7	0.9

TABLE M-32. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE B

HACTINE TERMINAL AREAS 2,312 EMPLOYTEES H.Y 17.94 49,363 0.26 0.54 3.11 3.61 4.66 30.3 59.3 59.3 336.4 392.8 500.0 H.O 6,59 3,460 0.29 0.53 3.11 3.34 4.25 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 ON-SITE TRUCK TRIPS S91 AGRES O-0 1,86 4,95 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.55 3.11 3.34 4.25 30.9 6.22 370.1 397.6 505.7 ON-SITE TRUCK TRIPS S91 AGRES O-0 1,86 4,302 0.23 0.24 3.11 3.34 4.25 3.11 3.34 4.25 30.9 6.22 370.1 397.6 505.7 ON-SITE TRUCK TRIPS S91 AGRES O-0 1,86 4,302 0.23 0.24 3.11 3.34 4.25 3.11 3.34 4.25 30.9 6.22 370.1 397.6 505.7 ON-SITE TRUCK TRIPS S91 AGRES O-0 1,86 4,302 0.21 1.114 4.53 11.14 11.14 1	Land Use	Trip Estimate Basis	Trip Purpose	Average Trip Distance pose (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	ROG NOX PM10 Summer CO Winter CO Emissions Emissions Emissions Emissions (lbs/day) (lbs/day) (lbs/day) (lbs/day)	NOX PH10 Summer CO Winter CO Emissions Emissions Emissions (1bs/day) (1bs/day) (1bs/day) (1bs/day)	PMIO Summer CO Winter CO sions Emissions Emissions (lbs/day) (lbs/day)	Winter CO Emissions (lbs/day)
H-S 7.40 0 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	MARINE TERMINAL AREAS	2,312 EMPLOYEES	3. H	17.94	49,363	0.26	0.54	3.11	3.61	4.68	30.3	58.3	338.4	392.8	509.0
H-0 8.59 3.460 0.29 0.53 3.11 3.34 4.25 30.9 62.2 370.1 397.6 O-W 14.83 53.990 0.23 0.52 3.11 3.34 4.25 30.9 62.2 370.1 397.6 O-W 14.83 53.990 0.23 0.52 3.11 3.34 4.25 30.9 62.2 370.1 397.6 O-O 9.29 3.763 0.21 0.47 3.11 4.53 14.32 14.42 3.61 2.1 3.9 25.8 24.4 S91 ACRES O-O 1.86 4.302 2.97 11.14 4.53 14.32 14.42 28.3 105.7 4.016.6 1.738.6 3.130.5 FRIPS S91 ACRES O-O 48.44 2.14,675 1.67 10.84 4.53 7.59 7.54 806.1 5.128.7 2.142.1 3.592.7 HRIPS S91 ACRES O-O 48.44 2.14,675 1.67 10.84 4.53 7.59 7.59 7.54 806.1 5.128.7 2.142.1 3.592.7			H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
SOUND 14,83 53,990 0.23 0.52 3.11 3.34 4.25 30.9 62.2 370.1 397.6 311 2.94 3.61 2.1 3.9 62.2 370.1 397.6 311 314 3.61 2.94 3.61 2.1 3.9 25.8 24.4 3.61 3.9 3.62			Н-0	8.59	3,480	0.29	0.53	3.11	3.97	5.13	2.6	4.0	23.9	30.4	39.4
Sol ACRES Color			4.0	14.83	53,990	0.23	0.52	3.11	3.34	4.25	30.9	62.2	370.1	397.6	505.7
591 ACRES 0.0 1.86 4,302 2.97 11.14 4.53 14.32 14.42 28.3 105.7 42.9 135.8 FRIPS 591 ACRES 0.0 16.11 174,239 1.82 10.46 4.53 8.15 8.15 8.21 700.4 4,016.6 1,738.6 3,130.5 FRIPS 591 ACRES 0.0 48.44 214,675 1.67 10.84 4.53 7.59 7.64 806.1 5,128.7 2,142.1 3,592.7 19.92 540,863 1.67 10.84 4.53 7.59 7.64 806.1 5,128.7 2,142.1 3,592.7			0.0	9.29	3,763	0.21	0.47	3.11	2.94	3.61	2.1	3.9	25.8	24.4	30.0
591 ACRES 0-0 1.80 4,302 2.37 11.14 1738 8.15 8.21 700.4 4,016.6 1,738.6 3,130.5 1731.5 591 ACRES 0-0 16.11 174,239 1.82 10.84 4.53 7.59 7.64 806.1 5,128.7 2,142.1 3,592.7 198.8 1992 540,863			(•	700	6	:		20 71	14 43	00	105 7	. 0	125.9	136 7
FRIPS 591 ACRES 0-0 16.11 174,239 1.82 10.46 4.53 8.15 8.15 7.00.4 4,016.6 1,738.6 3,130.5 1.00.5 48.44 214,675 1.67 10.84 4.53 7.59 7.64 806.1 5,128.7 2,142.1 3,592.7 1.00.9 48.44 214,675 1.00.9 48	ON-SITE TRUCK TRIPS	591 ACRES	0-0	1.80	4,302	76.7	11.14		14.32	74.47	6.03	7.601	44.3	0.667	130:1
591 ACRES 0.0 48.44 214,675 1.67 10.84 4.53 7.59 7.64 806.1 5,128.7 2,142.1 3,592.7	BAY AREA TRUCK TRIPS	591 ACRES	0-0	16.11	174,239	1.82	10.46		8.15	8.21	700.4			3,130.5	3,152.2
19.92 540,863 1.622.6 9,422.6 4,935.6 7,986.8	LONG DISTANCE TRUCK TRIF		0-0	48.44	214,675	1.67	10.84		7.59	7.64	806.1			3,592.7	3,618.1
19.92 540,863 7,986.8											:				;
	TOTALS			19.92	540,863						1,622.6			7,986.8	8,353.5

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for residential and nonresidential land uses.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE M-33. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE B AND EMISSION RATES FOR 2010

		Net D Trip	Net Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions		Average Daily Exhaust Plus Entrained	Average Daily Traffic- Related Carbon Monoxide Emissions	/ Traffic- n Monoxide ns
	Amount of	Internal	External	Total	Daily VMT	ed compod)	:	spunod)	od spinod)	
Land Use	Development	Trips	Trips	Trips	Estimate	R0G	NOx	per day)	Summer	Winter
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	0	1,246	1,246	19, 135	11.4	22.2	131.2	146.2	187.6
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
JIT AREA	167 EMPLOYEES	0	491	491	7,740	4.6	0.6	53.1	58.9	75.5
SPRR TERMINAL	150 EMPLOYEES	0	441	441	6,953	4.1	8.1	47.7	52.9	67.8
UP RAIL TERMINAL	67 EMPLOYEES	0	210	210	3,222	1.9	3.7	22.1	24.6	31.6
MARINE TERMINAL AREAS	2,312 EMPLOYEES	0	7,202	7,202	110,597	65.8	128.5	758.1	845.2	1,084.1
ON-SITE TRUCK TRIPS	591 ACRES	2,313	0	2,313	4,302	28.3	105.7	42.9	135.8	. 136.7
BAY AREA TRUCK TRIPS	591 ACRES	0	10,817	10,817	174,239	700.4	4,016.6	1,738.6	3,130.5	3,152.2
LONG DISTANCE TRUCK TRIPS	591 ACRES	0	4,432	4,432	214,675	806.1	5,128.7	2,142.1	3,592.7	3,618.1
					:					
Autos		0	9,590	9,590	147,647	87.8	171.6	1,012.0	1,127.8	1,446.6
Trucks		2,313	15,249	17,562	393,217	1,534.8	9,251.0	3,923.6	6,859.0	0.706,9
Total		2,313	24,839	27,152	540,863	1,622.6	9,422.6	4,935.6	7.986.8	8,353.5

VMT = vehicle miles traveled Notes:

ROG = reactive organic compounds NOx = nitrogen oxides PMIO = inhalable particulate matter

TABLE M-34. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE B

	Annual				nual Vehic ear) For A		
Land Use	Vehicle Trips	Annual VMT	ROG	NOx	CO	S0x	PM10
FISCO AREAS 1, 2, & 3	311,500	4,783,756	1.42	2.78	20.00	0.16	16.40
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	122,750	1,935,035	0.57	1.12	8.05	0.06	6.63
SPRR TERMINAL	110,250	1,738,256	0.51	1.01	7.23	0.06	5.96
UP RAIL TERMINAL	52,500	805,481	0.24	0.47	3.37	0.03	2.76
MARINE TERMINAL AREAS	1,800,500	27,649,161	8.23	16.06	115.60	0.91	94.76
ON-SITE TRUCK TRIPS	578,250	1,075,545	3.54	13.21	17.02	0.76	5.37
BAY AREA TRUCK TRIPS	2,704,250	43,559,834	87.55	502.08	392.21	30.73	217.32
LONG DISTANCE TRUCK TRIPS	1,108,000	53,668,750	100.76	641.08	450.14	37.86	267.76
				•••••		•	
Autos	2,397,500	36,911,689	11.0	21.4	154.3	1.2	126.5
Trucks	4,390,500	98,304,129	191.8	1,156.4	859.4	69.4	490.4
Total	6,788,000	135,215,817	202.8	1,177.8	1,013.6	70.6	617.0

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE M-35. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE C

Land Use or Trip Generation Category	Trip Estimate Basis		Base Trip Vehicle ieneration Generation - Rate Rate	Base Trip Vehicle P/A Trip Rate Splits Generation Generation	te Splits	Base Trip Volume	<pre># Productions W Internal Destinations</pre>	* Productions Number of W Internal Internal Trip Destinations Productions	Number of # Attractions ernal Trip W Internal oductions Origins	Attractions Number of Internal/ W Internal Internal Trip External Origins Attractions Trips	Internal/ External Trips	ernal/ Net ternal Trips Adjusted Trips Generated Trip Rate	Trip Rate Adjusted Adjustment Trip Rate Factor	Trip Rate Adjustment Factor
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0.00	0.0	101	\$ 06	0	*0	0	*0	0	0	0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	0.00	0.0	10\$	\$ 06	0	*0	0	* 0	0	0	0	0.0	0.0
JIT AREA	208 EMPLOYEES	3.50	9.0 0	10\$	\$ 06	728	*0	0	* 0	0	728	728	3.5	0.0
SPRR TERMINAL	210 EMPLOYEES	5 3.50	9.0 0	101	* 06	735	70	0	* 0	0	735	735	3.5	0.0
UP RAIL TERMINAL	0 EMPLOYEES	0.00	0.0	10%	\$ 06	0	*0	0	*0	0	0	0	0.0	0.0
MARINE TERMINAL AREAS	2,970 EMPLOYEES	3.50	9.0 0	10\$	\$ 06	10,395	*0	0	*0	0	10,395	10,395	3.5	0.0
ON-SITE TRUCK TRIPS	759 ACRES	8.82	2 0.0	20\$	203	6,694	*0	0	*0	6,694	0	6,694	8.8	0.0
BAY AREA TRUCK TRIPS	759 ACRES	14.25	5 0.0	20%	203	10,819	*0	0	*0	0	10,819	10,819	_	0.0
LONG DISTANCE TRUCK TRIPS	759 ACRES	5.84	4 0.0	20\$	20\$	4,433	*0	0	*0	0	4,433	4,433	5.8	0.0
								:		:	:			:
TOTALS						33,804		0		6,694	27,110	33,804		0.0

Notes: Average daily employee trip rates are based on data from the ITE trip generation manual (Institute of Transportation Engineers, 1991) for light industrial land uses.

Average daily truck trip rates are based on data provided by Jordan Woodman Dobson, and assume average daily trips are 80% of peak week trips.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

Production/attraction splits reflect the origin of a round trip.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

TABLE M-36. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE C

FISCO AREAS 1, 2, & 3 0 EMPLOYEES FISCO AREAS 4 & 5 0 EMPLOYEES JIT AREA 208 EMPLOYEES	Trip	of Net	Trip	Program	Net	Not TCM	Duration					
ო ა		Trips	Rates	Effect	Trip Rate	Effe	ess (Minutes)	15	52	35	45	55
ಣ <i>ಪ</i>												
	* *	40.0%	0.0	15\$	0.0	0	24.75	5.0	10.0%	20.0%	25.0\$	40.0%
	H·S	\$0.0	0.0	*0	0.0	0	12.50	10.0%	30.0%	25.0\$	15.0%	20.0%
	0-н	5.0\$	0.0	*0	0.0	0	14.73	10.0%	25.0\$	35.0\$	15.0\$	15.0%
	∦- 0	50.0\$	0.0	101	0.0	0	21.70	5.0	20.0%	20.0\$	20.0%	35.0\$
	0-0	5.0\$	0.0	*0	0.0	0	15.93	10.0%	25.0\$	35.0%	15.0%	15.0%
	7	•	6	\$ 	c	c	75 75	70 5	10 01	20 0 %	25 02	40.0%
	. Y	0.0	0.0	. 20	0.0	. 0	12.50	10.0%	30.0%	25.0	15.0\$	20.0%
	H-0	5.0\$	0.0	*0	0.0	0	14.73	10.0%	25.0%	35.0	15.0%	15.0\$
	M-0	50.0\$	0.0	10\$	0.0	0	21.70	5.0%	20.0%	20.0%	20.0%	35.0\$
	0.0	5.0\$	0.0	*0	0.0	0	15.93	10.0%	25.0\$	35.0\$	15.0%	15.0\$
				į	,	;	;				į	4
	3 .	40.0%	1.4	151	1.2	248	24.75	5.03	10.01	20.03	7 0.67	40.04
	H·S	0.0%	0.0	*0	0.0	0	12.50	10.0%	30.0%	25.0%	15.0%	20.0%
	н-0	5.0%	0.2	*0	0.2	0	14.73	10.0%	25.0%	35.0\$	15.0%	15.0
	M- 0	\$0.0\$	1.8	10%	1.6	328	21.70	5.0%	20.0%	20.0%	20.0%	35.0
	0-0	5.0%	0.2	**	0.2	36	15.93	10.0%	25.0%	32.0%	15.0%	15.0\$
SPRR TERMINAL 210 EMPLOYEES	±	40.0\$	1.4	15\$	1.2	250	24.75	5.03	10.0%	20.0%	25.0%	40.0%
	H-S	\$0.0	0.0	*0	0.0	0	12.50	10.0%	30.0%	25.0%	15.0\$	20.0%
	H-0	5.0	0.2	\$ 0	0.2	0	14.73	10.0	25.0%	35.0	15.0%	15.0%
	4 ∙0	50.0\$	1.8	10%	1.6	331	21.70	5.0	20.0%	20.0%	20.0%	35.0%
	0-0	5.0\$	0.2	x 0	0.2	37	15.93	10.0%	25.0\$	35.0	15.0%	15.0\$
							;	;	;	;	;	;
UP RAIL TERMINAL 0 EMPLOYEES	¥	40.0%	0.0	15\$	0.0	0	24.75	5.0	10.0%	20.0%	25.0%	40.0%
	H-S	0.0	0.0	*0	0.0	0	12.50	10.0%	30.0%	25.0%	15.0	20.0%
	H:0	5.0\$	0.0	10	0.0	0	14.73	10.0%	25.0%	35.0%	15.0%	15.0\$
	м-0	20.0\$	0.0	101	0.0	0	21.70	5.0\$	20.0%	20.0%	20.0%	35.0%
	0-0	5.0\$	0.0	*0	0.0	0	15.93	10.01	25.0\$	35.0%	15.0	15.0%

TABLE M-36. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE C

			Percent	Net	TCM	Adjusted	Adjusted	0veral1	Mean Trip	Percent	of Travel T	Percent of Travel Time by Speed (mph)	(wbh)	
Land Use	Trip Estimate Basis	Tr1p Purpose	of Net Trips	Trip Rates	Program Effect	Net Trip Rate	Net Trips E	Net ICM Trips Effectiveness	Ouration	15	15 25	35 45	45	52
MARINE TERMINAL AREAS	2,970 EMPLOYEES	¥∙H	40.0%	1.4	151	1.2	3,534		24.75	5.0\$	10.01	20.0%	25.0	40.0%
		H-S	0.0	0.0	*0	0.0	0		12.50	10.0	30.0%	25.0\$	15.0	20.0%
		0-н	5.0%	0.2	X 0	0.2	520		14.73	10.0	25.0\$	35.0%	15.0%	15.0%
		M-0	\$0.0\$	1.8	101	1.6	4,678		21.70	5.0%	20.0%	20.0%	20.0%	35.0\$
		0-0	5.0\$	0.2	*0	0.2	520		15.93	10.0	25.0%	35.0%	15.0%	15.0%
ON-SITE TRUCK TRIPS	759 ACRES	0.0	100.0%	8.8	*0	8.8	6,694		6.20	75.0%	20.0%	5.0\$	0.0	0.0
BAY AREA TRUCK TRIPS	759 ACRES	0-0	100.0%	14.3	* 0	14.3	10,819		28.85	15.0\$	25.0\$	30.0%	20.0%	10.0%
LONG DISTANCE TRUCK TRIPS	PS 759 ACRES	0-0	100.0%	5.8	*0	5.8	4,433		77.50	10.0%	20.0%	25.0\$	25.0\$	20.0%
							007	3						
IOTALS							34,428	4.14						

Notes: H·W = home-work trips

H-S = home-shopping trips

H.O = home.other trips

0-W = other-work trips

0.0 = other other trips

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area. TCM = transportation control measures

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE M-37. VEHICLE TRAVEL SUMMARY, ALTERNATIVE C

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	X X O X O	0000	24.8 12.5 14.7 21.7	17.94 7.40 8.59 14.83	0 0 0	43.5 35.5 35.0 41.0
FISCO AREAS 4 & 5	0 EMPLOYEES	3 H H H O O	00000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	0000	43.5 35.5 35.0 41.0 35.0
JIT AREA	208 EMPLOYEES	H.S. H.O. M.O.O.	248 0 0 328 36	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	4,450 0 0 4,864 335	43.5 35.5 35.0 41.0 35.0
SPRR TERMINAL	210 EMPLOYEES	H-S N-H-O N-O-O	250 0 0 331 37	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	4,486 0 0 4,908 344	43.5 35.5 35.0 41.0 35.0
UP RAIL TERMINAL	0 EMPLOYEES	H-H-S O-H-O O-O-O-O-O-O-O-O-O-O-O-O-O-O-O-O-O	0000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	0000	43.5 35.5 35.0 41.0 35.0

TABLE M.37. VEHICLE TRAVEL SUMMARY, ALTERNATIVE C

LAND USE	TRIP ESTIMATE BASIS	TRIP	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,970 EMPLOYEES	¥ ± ± ± × × × × × × × × × × × × × × × ×	3,534 0 520	24.8 12.5 14.7	17.94 7.40 8.59	63,413 0 4,468	43.5 35.5 35.0
		M-0 0-0	4,678 520	21.7 15.9	14.83 9.29	69,367 4,832	41.0 35.0
ON-SITE TRUCK TRIPS	759 ACRES	0-0	6,694	6.2	1.86	12,451	18.0
BAY AREA TRUCK TRIPS	759 ACRES	0-0	10,819	28.9	16.11	174,272	33.5
LONG DISTANCE TRUCK TRIPS	759 ACRES	0-0	4,433	77.5	48.44	214,723	37.5
TOTAL		:	32,428		17.36	562,912	
TOTALS BY TRIP PURPOSE:		±:	4,032	24.8	17.94	72,349	43.5
		. O.H	520	14.8	8.59	4,468	34.9
		M-0	5,337	21.7	14.83	79,139	41.0
		0-0	22,539	31.4	18.06	406,956	34.6
			32,428	28.7	17.36	562,912	36.3

Notes:

: H-W = home-work trips H-S = home-shopping trips H-O = home-other trips O-W = other-work trips O-O = other-other trips VMT = vehicle miles traveled

TABLE M-38. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE C

		Trip	Average Oistance	VMT by	Exhaust ROG Rate	Exhaust NOx Rate	Total PM10 Emission Rate	Summer CO Rate	Winter CO Rate	ROG Emissions	NOx Emissions	PM10 Emissions	Summer CO Emissions	Winter CO Emissíons
Land Use	Trip Estimate Basis	Purpose	(miles)	Category	(gm/mile)	(gm/mile)	(gm/mile)	(gm/mile)	(gm/mile)	(1bs/day)	(1bs/day)	(1bs/day)	(1bs/day)	(1bs/day)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	Ŧ	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		Н-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0.0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	± 3÷	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		** -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0.0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	208 EMPLOYEES	± 3-	17.94	4,450	0.26	0.54	3.11	3.61	4.68	2.7	5.3	30.5	35.4	45.9
		H-S	7.40	0	0.28	0.55	3.11	3.86	4,95	0.0	0.0	0.0	0.0	0.0
		Н∙0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		7 €-0	14.83	4,864	0.23	0.52	3.11	3.34	4.25	2.8	5.6	33.3	35.8	45.6
		0.0	9.29	335	0.21	0.47	3.11	2.94	3.61	0.2	0.4	2.3	2.2	2.7
SPRR TERMINAL	210 EMPLOYEES	æ 3÷	17.94	4,486	0.26	0.54	3.11	3.61	4.68	2.8	5.3	30.7	35.7	46.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		₩-0	14.83	4,908	0.23	0.52	3.11	3.34	4.25	2.8	5.7	33.6	36.1	7
		0-0	9.29	344	0.21	0.47	3.11	2.94	3.61	0.2	0.4	2.4	2.2	2.7
UP RAIL TERMINAL	0 EMPLOYEES	≆	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H∙S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-H	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0

TABLE M-38. SUMMARY OF WHT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE C

			Average		Exhaust	Exhaust	Total PM10	Summer	Winter	ROG	NOX	PM10	PM10 Summer CO Winter CO	Winter CO
		Trip	Trip Distance	VMT by	ROG Rate	NOx Rate	Emission Rate	CO Rate	CO Rate	Emissions	Emissions Emissions Emissions Emissions Emissions	Emissions	Emissions	Emissions
Land Use	Trip Estimate Basis	Purpose	Purpose (miles)	Category	Category (gm/mile)	(gm/mile)	(gm/mile)	(gm/mile)	(gm/mile)	(1bs/day)	(1bs/day) (1bs/day) (1bs/day) (1bs/day)	(1bs/day)	(lbs/day)	(1bs/day)
MARINE TERMINAL AREAS	2,970 EMPLOYEES	Ŧ	17.94	63,413	0.26	0.54	3.11	3.61	4.68	38.9	74.9	434.7	504.6	623.9
		÷	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		н-0	8.59	4,468	0.29	0.53	3.11	3.97	5.13	3.3	5.2	30.6	39.1	9.03
		M-0	14.83	69,367	0.23	0.52	3.11	3.34	4.25	39.7	80.0	475.5	510.8	649.8
		0-0	9.29	4,832	0.21	0.47	3.11	2.94	3.61	2.6	5.1	33.1	31.3	38.5
ON-SITE TRUCK TRIPS	759 ACRES	0-0	1.86	12,451	2.97	11.14	4.53	14.32	14.42	82.0	305.9	124.2	393.1	395.7
BAY AREA TRUCK TRIPS	759 ACRES	0.0	16.11	174,272	1.82	10.46	4.53	8.15	8.21	700.5	4.017.4	1,738.9	3,131.1	3,152.7
LONG DISTANCE TRUCK TRIPS	os 759 ACRES	0.0	48.44	214,723	1.67	10.84	4.53	7.59	7.64	806.3	5,129.8	2,142.5	3,593.5	3,618.9
TOTALS			17.36	562,912						1,684.8	9,640.7	5,112.4	8,350.9	8,749.1

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for residential and nonresidential land uses.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE M.39. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE C AND EMISSION RATES FOR 2010

		Net (let Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions	mer Day ed Ozone issions	Average Daily Exhaust Plus Entrained PM10 Emissions	Average Daily Traffic- Related Carbon Monoxide Emissions (pounds per day)	Traffic- Monoxide IS
. Land Use	Amount of Development	Internal Trips	External Trips	Total Trips	Daily VMT Estimate	ROG	NOX	(pounds per day)	Summer	Winter
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0	0	0	0	0.0	0.0		0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
JIT AREA	208 EMPLOYEES	0	612	612	9,648		11.2		73.4	94.1
SPRR TERMINAL	210 EMPLOYEES	0	618	618	9,738		11.3		74.1	95.0
UP RAIL TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0		0.0	0.0
MARINE TERMINAL AREAS	2,970 EMPLOYEES	0	9,252	9,252	142,080	84.6	165.1	973.9	1,085.7	1,392.7
ON-SITE TRUCK TRIPS	759 ACRES	6,694	0	6,694	12,451	82.0	305.9	124.2	393.1	395.7
BAY AREA TRUCK TRIPS	759 ACRES	0	10,819	10,819	174,272	700.5	4,017.4	1,738.9	3,131.1	3,152.7
LONG DISTANCE TRUCK TRIPS	759 ACRES	0	4,433	4,433	214,723	806.3	5,129.8	2,142.5	3,593.5	3,618.9
						:			:	
Autos		0	10,482	10,482	161,467	0.96	187.6	1,106.8	1,233.2	1,581.8
Trucks		6,694	15,252	21,946	401,446	1,588.8	9,453.1	4,005.7	7,117.7	7,167.4
Total		6,694	25,734	32,428	562,912	1,684.8	9,640.7	5,112.4	8,350.9	8,749.1

ROG = reactive organic compounds NOx = nitrogen oxides PM10 = inhalable particulate matter

TABLE M-40. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE C

	Annual				nual Vehic ear) For A		
Land Use	Vehicle Trips	Annual VMT	ROG	NO×	CO	· S0x	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	153,000	2,412,068	0.71	1.40	10.04	0.08	8.27
SPRR TERMINAL	154,500	2,434,485	0.72	1.41	10.13	0.08	8.34
UP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,313,000	35,520,089	10.57	20.64	148.51	1.17	121.74
ON-SITE TRUCK TRIPS	1,673,500	3,112,710	10.25	38.24	49.25	2.20	15.53
BAY AREA TRUCK TRIPS	2,704,750	43,567,888	87.56	502.17	392.29	30.74	217.36
LONG DISTANCE TRUCK TRIPS	1,108,250	53,680,859	100.78	641.23	450.25	37.87	267.82
						•••••	
Autos	2,620,500	40,366,642	12.0	23.5	168.7	1.3	138.3
Trucks	5,486,500	100,361,457	198.6	1,181.6	891.8	70.8	500.7
•••••							
Total	8,107,000	140,728,099	210.6	1,205.1	1,060.5	72.1	639.1

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE M-41. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE D

Land Use or Trip Generation		Base Tr Generati	Base Trip Vehicle	e P/A	Base Trip Vehicle P/A Trip Rate Splits Generation Generation	its	Base Trip	* Productions Number of W Internal Internal	Number of Internal Trip	Number of % Attractions iternal Trip W Internal	Attractions Number of Internal/ W Internal Internal Trip External	Internal/ External	Net Trips	Trip Rate Adjusted Adjustment	Trip Rate djustment
	Trip Estimate Basis		te Rat	e Produ	Rate Productions Attractions	tions	Volume	Volume Destinations Productions	Productions	Origins	Origins Attractions	Trips Generated Trip Rate	Generated		Factor
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	S 0.00	0.0 0.0	0	104	\$ 06	0	X 0	0	X 0	0	0	0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	S 0.00	0.0 0.0	0	10%	\$ 06	0	* 0	0	*0	0	0	0	0.0	0.0
JIT AREA	343 EMPLOYEES	3.50	9.0 0.6	9	10%	\$ 06	1,201	**	0	*0	0	1,201	1,201	3.5	0.0
SPRR TERMINAL	0 EMPLOYEES	S 0.00	0.0 0.0	0	10%	\$ 06	0	*0	0	*0	0	0	0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	S 0.00	0.0 0.0	0	101	\$ 06	0	*0	0	*0	0	0	0	0.0	0.0
MARINE TERMINAL AREAS	2,923 EMPLOYEES	3.50	9.0 0.6	9	101	\$ 06	10,231	10	0	*0	0	10,231	10,231	3.5	0.0
ON-SITE TRUCK TRIPS	747 ACRES	8.56	99 0.0	0	20\$	203	6,394	*0	0	*0	6,394	0	6,394	8.6	0.0
BAY AREA TRUCK TRIPS	747 ACRES	14.47	47 0.0	0	203	203	10,812	*0	0	**	0	10,812	10,812	14.5	0.0
LONG DISTANCE TRUCK TRIPS	747 ACRES		5.93 0.0	0	201	20\$	4,430	*0	0	80	0	4,430	4.430	5.9	0.0
									:		:	:			:
TOTALS							33,068		0		6,394	26,674	33,068		0.0

Notes: Average daily employee trip rates are based on data from the ITE trip generation manual (Institute of Transportation Engineers, 1991) for light industrial land uses.

Average daily truck trip rates are based on data provided by Jordan Woodman Dobson, and assume average daily trips are 80% of peak week trips.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

Production/attraction splits reflect the origin of a round trip.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated st internal/external trips + 50% of internal productions + 50% of internal attractions.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

TABLE M-42. TRIP PURPOSE, TOM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE D

			Percent	Net	£	Adjusted	Adjusted	Overall	Mean Trip	Percent	Percent of Travel Time by Speed (mph)	ime by Spee	(wbh)	
:		Trip	of Net	Trip	Program	Net Tails Date	Net Taing Cee	TCM	Duration	<u>.</u>	¥	36	Ä	. 4
Land Use	Trip Estimate Basis	Purpose	Irips	Kates	Ellect	irip kate	il ips cit	פררו אפוופסס	(Hilliages)	CT .	3	S .	f	3
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	.∓. ∓.	40.0%	0.0	151	0.0	0		24.75	5.0	10.0%	20.0%	25.0%	40.0%
	-	H-S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0%	25.0%	15.0%	20.0%
		H-0	5.0\$	0.0	*0	0.0	0		14.73	10.01	25.0%	35.0%	15.0	15.0%
		M-0	50.0\$	0.0	101	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0
		0-0	5.0	0.0	*0	0.0	0		15.93	10.0	25.0	35.0\$	15.0%	15.0\$
FISCO ARFAS 4 & 5	0 EMPLOYEES	÷	40.0%	0.0	15\$	0.0	0		24.75	5.0	10.0	20.0\$	25.0%	40.0%
		H-S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0\$	25.0%	15.0\$	20.0%
		H-0	5.0\$	0.0	*0	0.0	0		14.73	10.01	25.0\$	35.0%	15.0\$	15.0\$
		M·0	50.0\$	0.0	10%	0.0	0		21.70	5.0	20.0%	20.0	20.0%	35.0\$
		0.0	5.0\$	0.0	*0	0.0	0		15.93	10.0%	25.0	35.0\$	15.0	15.0\$
JIT ARFA	343 EMPLOYEES	±	40.0%	1.4	15\$	1.2	408		24.75	5.0\$	10.0	20.0\$	25.0\$	40.0%
		÷S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0	25.0	15.0%	20.0%
		H-0	5.0%	0.2	*0	0.2	0		14.73	10.01	25.01	35.0%	15.0\$	15.0%
		1 .0	\$0.0\$	1.8	101	1.6	540		21.70	5.0	20.0%	20.0%	20.0%	35.01
		0-0	5.0	0.2	* 0	0.2	09		15.93	10.0	25.0%	35.0\$	15.0%	15.0\$
INITIALITY COOL	SEAD OF THE SEASON OF THE SEAS	7	40 04	c	15.2	0	c		24.75	5.0\$	10.0%	20.0%	25.0\$	40.0%
STAN IENSTIME		: ¥	0.0	0.0	*0	0.0	0		12.50	10.0%	30.0\$	25.0	15.0%	20.0%
		Н-0	5.0	0.0	*0	0.0	0		14.73	10.0%	25.0\$	35.0%	15.0\$	15.0\$
		м-0	\$0.0\$	0.0	10*	0.0	0		21.70	5.0\$	20.0%	20.0%	20.0%	35.0%
		0-0	5.0%	0.0	x 0	0.0	0		15.93	10.0%	25.0%	35.0\$	15.01	15.0%
UP RAIL TERMINAL	0 EMPLOYEES	÷	40.0%	0.0	15\$	0.0	0		24.75	5.0%	10.0%	20.0%	25.0\$	40.0%
		H-S	0.0	0.0	*0	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0\$
		#-0	5.0	0.0	*0	0.0	0		14.73	10.01	25.0%	35.0\$	15.0\$	15.0\$
		M-0	50.0\$	0.0	101	0.0	0		21.70	5.01	20.0%	20.0%	20.0%	35.0%
		0.0	5.0%	0.0	* 0	0.0	0		15.93	10.0%	25.0\$	35.0%	15.0%	15.0

TABLE M-42. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE D

			Percent	Net	TCM	Adjusted	Adjusted	Overall	Mean Trip	Percent (of Travel T	Percent of Travel Time by Speed (mph)	((mph)	
Land Use	Trip Estimate Basis	Trip Purpose	of Net Trips	Trip Rates	Program Effect	Net Trip Rate	Net Trips E	Net TCM Trips Effectiveness	Duration	15	25	15 25 35 45	45	55
MARINE TERMINAL AREAS	2,923 EMPLOYEES	¥	40.0%	1.4	15\$	1.2	3,479		24.75	5.0\$	10.0%	20.0%	25.0%	40.0%
		H·S	0.0%	0.0	*0	0.0	0		12.50	10.0%	30.0%	25.0\$	15.0%	20.0%
		0-¥	5.0%	0.2	1 0	0.2	512		14.73	10.01	25.0	35.04	15.0%	15.0%
		₩-0	50.0%	1.8	101	1.6	4,604		21.70	5.0\$	20.0%	20.0%	20.0%	35.0\$
		0-0	5.0%	0.2	*0	0.2	512		15.93	10.0%	25.0%	35.0\$	15.0%	15.0%
		ć	30	ć	à	d	YOU		96	40	**	3	à	•
ON-SITE TRUCK TRIPS	/4/ ACRES	-	100.04	9.0	5	0.0	965.0		0.50	*0.c/	*0.02	50.c	5.0	*0.0
BAY AREA TRUCK TRIPS	747 ACRES	0.0	100.0%	14.5	*0	14.5	10,812		28.85	15.0\$	25.01	30.0%	20.0%	10.01
LONG DISTANCE TRUCK TRIPS	PS 747 ACRES	0-0	100.0%	5.9	*0	5.9	4,430		77.50	10.0%	20.0%	25.0%	25.0%	20.0%
TOTALS							31,751	4.0%						

Notes: H-W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

0-W = other-work trips

0.0 = other other trips

TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE M-43. VEHICLE TRAVEL SUMMARY, ALTERNATIVE D

LAND USE	TRIP ESTIMATE BASIS	TRIP	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	# # # # O	0 0 0	24.8 12.5 14.7	17.94 7.40 8.59	0000	43.5 35.5 35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	30 HHHO		24.8 24.8 12.5 14.7	17.94 7.40 14.83		35.0 35.0 43.5 35.5 35.0 41.0
JIT AREA	343 EMPLOYEES	0 H H H O O	0 408 0 0 540	15.9 24.8 12.5 14.7 21.7	9.29 17.94 7.40 8.59 9.29	7,321 0 0 8,007	35.0 43.5 35.5 35.0 41.0
SPRR TERMINAL	0 EMPLOYEES	2 3 5 C B C C C C C C C C C C C C C C C C C	9 0000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83		43.5 35.5 35.0 41.0 35.0
UP RAIL TERMINAL	O EMPLOYEES	X (0000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	0 0 0 0	43.5 35.5 35.0 41.0 35.0

TABLE M-43. VEHICLE TRAVEL SUMMARY, ALTERNATIVE D

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,923 EMPLOYEES	M-H O-H O-0	3,479 0 512 4,604	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	62,426 0 4,399 68,270 4,758	43.5 35.5 35.0 41.0 35.0
ON-SITE TRUCK TRIPS	747 ACRES	0-0	6,394	6.2	1.86	11,893	18.0
BAY AREA TRUCK TRIPS	747 ACRES	0.0	10,812	28.9	16.11	174,159	33.5
LONG DISTANCE TRUCK TRIPS	747 ACRES	0-0	4,430	77.5	48.44	214,578	37.5
TOTALS			31,751		17.52	556,369	
TOTALS BY TRIP PURPOSE:		¥ Y	3,887	24.8	17.94	69,747	43.5
		. H	512	14.8	8.59	4,399	34.9
		M -0	5,144	21.7	14.83	76,277	41.0
		0.0	22,208	31.7	18.28	405,945	34.6
			31,751	29.0	17.52	556,369	36.3

H-W = home-work trips Notes:

H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
VMT = vehicle miles traveled

TABLE M-44. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE D

		Trip	Average Distance	VMT by	Exhaust ROG Rate	Exhaust NOx Rate	Total PM10 Emission Rate	Summer CO Rate	Winter CO Rate	ROG Emissions	ROG NOx PM10 Emissions Emissions	PM10 Emissions	Summer CO Emissions	Winter CO Emissions
Land Use	Trip Estimate Basis	Purpose	(miles)	Category	(gm/mile)	(gm/mile)	(gm/mile)	(gm/mile)	(gm/mile)	(1bs/day)	(1bs/day) (1bs/day)	(1bs/day)	(1bs/day)	(1bs/day)
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	STAN OVER	3	17 04	c	96 0	C 22			4 68	0	0	c	0.0	0.0
CU AKEAS 1. 2. 8 3	ס באירטוברט	¥ ±	7.40		0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	
		H:0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	
		M -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	×	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		* -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	343 EMPLOYEES	÷	17.94	7,321	0.26	0.54	3.11	3.61	4.68	4.5	8.6	50.2	58.3	75.5
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-н	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		#-0	14.83	8,007	0.23	0.52	3.11	3.34	4.25	4.6	9.5	54.9	69.0	75.0
		0-0	9.29	558	0.21	0.47	3.11	2.94	3.61	0.3	9.0	3.8	3.6	4.4
SPRR TERMINAL	0 EMPLOYEES	÷	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		н.0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	H-H	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-Н	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0.0	9.59	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0

TABLE M-44. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE D

Land Use Tr	Trip Estimate Basis	Trip Purpose	Average Trip Distance pose (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate E (gm/mile)	Exhaust Total PM10 NOx Rate Emission Rate (gm/mile) (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (1bs/day)	PM10 Emissions (1bs/day)	ROG NOX PM10 Summer CO Winter CO Emissions Emissions Emissions Emissions Emissions (1bs/day) (1bs/day) (1bs/day)	Winter CO Emissions (lbs/day)
MARINE TERMINAL AREAS	2,923 EMPLOYEES	н-н	17.94	62,426	0.26	0.54	3.11	3.61	4.68	38.3	73.7	427.9	496.7	643.7
		H·S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	4,399	0.29	0.53	3.11	3.97	5.13	3.3	5.1	30.2	38.5	49.8
		∦ -0	14.83	68,270	0.23	0.52	3.11	3.34	4.25	39.1	78.7	468.0	502.7	639.5
		0-0	9.29	4,758	0.21	0.47	3.11	2.94	3.61	2.6	5.0	32.6	30.8	37.9
ON-SITE TRUCK TRIPS	747 ACRES	0-0	1.86	11,893	2.97	11.14	4.53	14.32	14.42	78.3	292.2	118.7	375.5	378.0
BAY AREA TRUCK TRIPS	747 ACRES	0.0	16.11	174,159	1.82	10.46	4.53	8.15	8.21	700.0	4,014.8	1,737.8	3,129.0	3,150.7
LONG DISTANCE TRUCK TRIPS	747 ACRES	0-0	48.44	214,578	1.67	10.84	4.53	7.59	7.64	805.7	5,126.3	2,141.1	3,591.1	3,616.4
TOTALS			17.52	556,369						1,676.7	9,614.3	5,065.0	8,285.1	8,671.0

ROG = reactive organic compounds NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for residential and nonresidential land uses.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions

used to compute average trip lengths.

TABLE M-45. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE D AND EMISSION RATES FOR 2010

		Net D Trip	Net Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions		Average Daily Exhaust Plus Entrained	Average Daily Traffic-Related Carbon Monoxide	/ Traffic- I Monoxide IS
	Amount of	Internal	External	Total	Daily VMT	(pounds per day)		PMIU EIIIISS IOUS	(pourles per day)	udy)
Land Use	Development	Trips	Trips	Trips	Estimate	R0G	NOX	per day)	Summer	Winter
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
JIT AREA	343 EMPLOYEES	0	1,008	1,008	15,886	9.4	18.5	108.9	120.8	154.9
SPRR TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
MARINE TERMINAL AREAS	2,923 EMPLOYEES	0	9,107	9,107	139,853	83.2	162.5	928.6	1,068.7	1,370.9
ON-SITE TRUCK TRIPS	747 ACRES	6,394	0	6,394	11,893	78.3	292.2	118.7	375.5	378.0
BAY AREA TRUCK TRIPS	747 ACRES	0	10,812	10,812	174,159	700.0	4,014.8	1,737.8	3,129.0	3,150.7
LONG DISTANCE TRUCK TRIPS	747 ACRES	0	4,430	4.430	214,578	805.7	5,126.3	2,141.1	3,591.1	3,616.4
				,	1					
Autos		0	10,115	10,115	155,739	92.6	181.0	1,067.5	1,189.6	1,525.8
Trucks		6,394	15,242	21,636	400,630	1,584.1	9,433.3	3,997.5	7,095.6	7,145.1
Total		6,394	25,357	31,751	556,369	1,676.7	9,614.3	5,065.0	8,285.1	8,671.0

Notes: VMT = vehicle miles traveled ROG = reactive organic compounds NOX = nitrogen oxides PMIO = inhalable particulate matter

TABLE M-46. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE D

	Annual				nual Vehic ear) For A		
Land Use	Vehicle Trips	Annual VMT	ROG	NOx	CO	S0x	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	252,000	3,971,475	1.17	2.31	16.52	0.13	13.61
SPRR TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
UP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,276,750	34,963,268	10.41	20.31	146.18	1.16	119.83
ON-SITE TRUCK TRIPS	1,598,500	2,973,210	9.79	36.53	47.04	2.10	14.83
BAY AREA TRUCK TRIPS	2,703,000	43,539,699	87.50	501.85	392.03	30.72	217.22
LONG DISTANCE TRUCK TRIPS	1,107,500	53,644,531	100.72	640.79	449.94 	37.85	267.64
Autos	2.528.750	38,934,743	11.6	22.6	162.7	1.3	133.4
Trucks	5,409,000	100,157,440	198.0	1,179.2	889.0	70.7	499.7
Total	7,937,750	139,092,183	209.6	1,201.8	1,051.7	71.9	633.1

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of $0.03~\rm grams/vmt$ for passenger vehicles (Bay Area Air Quality Management District, 1996) and $0.64~\rm grams/vmt$ for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE M-47. SUMMARY OF TRAIN TYPE DATA USED FOR EMISSIONS ANALYSES

TDATH	TYPICAL		# 0F	ENGINE MIX	CHASIS	ENGINE	DATABASE		ION RATE,	LBS PER 1	L,000 TON-	MILES
TRAIN TYPE	(FEET)	GROSS TONS	# OF ENGINES	FACTOR	MODEL	CYCLE	CODE	ROG	NOx	CO	S0x	PM10
AMTRAK	600	500	1	100%	F59PHI	LINE	22	0.011	0.727	0.071	0.011	0.017
AMTRAK	1200	1000	2	100%	GP40	LINE	17	0.032	0.755	0.115	0.011	0.018
SWITCHER	300	350	1	100%	SW1500	YARD	3	0.051	0.819	0.120	0.011	0.022
FREIGHT	1200	1500	2	100%	GP9	LINE	11	0.045	0.814	0.136	0.011	0.018
FREIGHT	6000	6500	4	68% 32%	GP40 SD45	LINE LINE	17 29	0.032 0.032	0.755 0.731	0.115 0.084	0.073 0.073	0.018 0.018
FREIGHT	7500	8000	6	68% 32%	GP40 SD45	LINE LINE	17 29	0.032 0.032	0.755 0.731	0.115 0.084	0.073 0.073	0.018 0.018
SEGMENT:				C/D 3.5	JIT 4	E 1.5	F 2	LATHROP 62	SAN JOSE 43	GILROY 77		

Notes: SOx emission rates assume 0.05% sulfur for Amtrak, yard, and local freight locomotives, and 0.32% sulfur for long haul freight locomotives.

TABLE M-48. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, NO ACTION ALTERNATIVE

TRAIN			DAILY 7	TRAIN NUME	ERS BY RA	IL SEGMEN	T, NO A	CTION		
TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP S	AN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			4			4	4		2	2
FR6000	9	9	17		17	4	4	4		
TOTAL	25	17	47	26	17	48	20	4	14	2

TDATN		D	AILY THOUS	SANDS OF	TON-MILES	BY RAIL	SEGMENT,	NO ACTION			TOTAL FOR ALL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY	SEGMENTS
AMT600	294	224	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98	0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0	0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0	0	12.0	0.0	0.0	3.0	4.0	0.0	43.0	49.0	111.0
FR6000	220.5	252	51.0	0.0	34.0	3.0	4.0	124.0	0.0	0.0	688.5
TOTAL	612.5	476	141.0	45.5	34.0	36.0	20.0	124.0	301.0	49.0	1,839.0

TABLE M-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

TRAIN TYPE	ANNUAL ROG EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, NO ACTION ALTERNATIVE										TOTAL
	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	SAN JOSE	GILROY	TONS/YF
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	199	0	0	50	66	0	713	813	0.92
FR6000	2,558	2,924	592	0	394	35	46	1,439	0	0	3.99
TOTALS	4,894	3,840	1,287	290	394	263	177	1,439	2,090	813	7.74
TDATM		ANNUAL NO:	× EMISSIO	NS (POUNDS	/YEAR) BY	RAIL SEG	MENT, NO	ACTION A	TERNATIV		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP S	SAN JOSE	GILROY	TOTAL TONS/YF
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	3,563	0	0	891	1,188	0	12,768	14,550	16.48
	60 173	68,769	13,918	0	9,278	819	1,092	33,839	0	0	93.94
FR6000	00,175	00,703	_0,5_0								50.5

TABLE M-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

		ANNUAL CO	EMISSIONS	(POUNDS/	YEAR) BY	RAIL SEGME	NT, NO	ACTION AL	TERNATIVE		TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHR0P	SAN JOSE	GILROY	TONS/YR
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	. 0	0	0	0.21
FR1200	0	0	598	0	0	149	199	0	2,142	2,441	2.76
FR6000	8,457	9,666	1,956	0	1,304	115	153	4,756	0	0	13.20
TOTALS	20,202	15,485	4,878	1,356	1,304	1,163	696	4,756	9,529	2,441	30.91
		ANNUAL SO	× EMISSION	S (POUNDS	S/YEAR) B	Y RAIL SEGN	MENT, NO	ACTION A	ALTERNATIV	Ξ	
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	50	0	0	13	17	0	180	205	0.23
FR6000	5,905	6,749	1,366	0	911	80	107	3,321	0	0	9.22

190 911

7,546 7,686 1,743

TOTALS

1,260 205

218 174 3,321

11.63

TABLE M-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

	Α	NNUAL PM10	EMISSIONS	(POUNDS)	YEAR) BY	RAIL SEGM	ENT, NO	ACTION A	LTERNATIV	E	TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TONS/YR
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	80	0	0	20	27	0	285	325	0.37
FR6000	1,457	1,665	337	0	225	20	26	819	0	0	2.27
							100		1 010	205	
TOTALS	3,952	3,071	921	294	225	231	129	819	1,919	325	5.94

NOx = nitrogen oxides CO = carbon monoxide SOx = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

TABLE M-50. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE A

TDATN			DAILY TRA	IN NUMBER	S BY RAIL	SEGMENT	, ALTERN	ATIVE A		
TRAIN -	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	13	13	26		26	4	4	4		
TOTAL	29	21	54	26	26	48	20	4	14	2

TRAIN		DAI	LY THOUSAN	IDS OF TO	N-MILES B	Y RAIL SEG	GMENT, AL	TERNATIVE	Α		TOTAL FOR ALL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE		SEGMENTS
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	318.5	364.0	78.0	0.0	52.0	3.0	4.0	124.0	0.0	0.0	943.5
TOTAL	710.5	588.0	162.0	45.5	52.0	36.0	20.0	124.0	301.0	77.0	2,116.0

TABLE M-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

		ANNUAL	ROG EMISS	IONS (POL	INDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA	ΓIVE A		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHR0P	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,695	4,223	905	0	603	35	46	1,439	C	0	5.47
TOTALS	6,031	5,139	1,501	290	603	263	177	1,439	2,090	1,277	9.41
		ANNUAL	NOx EMISS	SIONS (POU	JNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA	TIVE A		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	2 0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	(0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	3 22,864	19.75
FR6000	86,917	99,333	21,286	0	14,190	819	1,092	33,839	(0	128.74
TOTALS	191,994	158,805	44,099	12,268	14,190	9,751	5,486	33,839	81,706	5 22,864	287.50

TABLE M-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

TRAIN		ANNUAL	. CO EMISS	IONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	IVE A		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	12,216	13,962	2,992	0	1,995	115	153	4,756	0	0	18.09
TOTALS	23,961	19,781	5,615	1,356	1,995	1,163	696	4,756	9,529	3,835	36.34

TRAIN		ANNUAL	SOx EMISS	IONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNATI	VE A		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY	TONS/YR
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	8,530	9,749	2,089	0	1,393	80	107	3,321	0	0	12.63
TOTALS	10,171	10,686	2,441	190	1,393	218	174	3,321	1,260	322	15.09

TABLE M-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

TDATM		ANNUAL	PM10 EMIS	SIONS (POL	JNDS/YEAR) BY RAIL	SEGMENT	, ALTERNA	ATIVE A		TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	40	0	0	20	27	0	285	510	0.44
FR6000	2,104	2,405	515	0	344	20	26	819	0	0	3.12
TOTALC	<i>A</i> E00	2 011	1 050	204	244	221	120	010	1 010	E10	6.86
TOTALS	4,599	3,811	1,059	294	344	231	129	819	1,919	510	

NOx = nitrogen oxides
CO = carbon monoxide
SOx = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

 ${\rm C/D}$ = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

TABLE M-52. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE B

770 4 741		***	DAILY TRA	IN NUMBER	RS BY RAIL	SEGMENT	. ALTERN	ATIVE B		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	10	10	20		20	4	4	4		
TOTAL	26	18	48	26	20	48	20	4	14	2

TDATA	DAILY THOUSANDS OF TON-MILES BY RAIL SEGMENT, ALTERNATIVE B										
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP S	AN JOSE	GILROY	SEGMENTS
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	245.0	280.0	60.0	0.0	40.0	3.0	4.0	124.0	0.0	0.0	756.0
TOTAL	637.0	504.0	144.0	45.5	40.0	36.0	20.0	124.0	301.0	77.0	1,928.5

TABLE M-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TRAIN		ANNUAL	ROG EMISS	SIONS (POL	JNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	IVE B		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TONS/YF
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	2,843	3,249	696	0	464	35	46	1,439	0	0	4.39
TOTALS	5,178	4,165	1,292	290	464	263	177	1,439	2,090	1,277	8.32
		ANNUAL	NOx EMISS	SIONS (PO	JNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	TIVE B		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YF
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.7
FR6000	66,859	76,410	16,374	0	10,916	819	1,092	33,839	0	0	103.1
TOTALS	171,936	135,882	39,187	12,268	10,916	9,751	5,486	33,839	81,706	22,864	261.9

TABLE M-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TDATH		ANNUAL	. CO EMISS	IONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	IVE B		TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TONS/YR
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	9,397	10,740	2,301	0	1,534	115	153	4,756	0	0	14.50
TOTALS	21,142	16,559	4,924	1,356	1,534	1,163	696	4,756	9,529	3,835	32.75
TDAIN		ANNUAL	SOx EMISS	SIONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA	TIVE B	-	TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHR0P	SAN JOSE	GILROY	
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	6,562	7,499	1,607	0	1,071	80	107	3,321	0	0	10.12

TOTALS 8,202 8,436 1,958 190 1,071 218 174 3,321 1,260 322 12.58

TABLE M-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TDATN		ANNUAL	PM10 EMISS	IONS (POL	INDS/YEAR)	BY RAIL	SEGMENT	, ALTERNA	TIVE B		TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	40	0	0	20	27	0	285	510	0.44
FR6000	1,619	1,850	396	0	264	20	26	819	0	0	2.50
	•										
TOTALS	4,114	3,256	940	294	264	231	129	819	1,919	510	6.24

NOx = nitrogen oxidesCO = carbon monoxide

S0x = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

TABLE M-54. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE C

TD 4 7 11			DAILY TRA	IN NUMBER	S BY RAIL	SEGMENT,	ALTERN	ATIVE C		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	14	13	27		27	4	4	4		
TOTAL	30	21	55	26	27	48	20	4	14	2

7FD 4 741		DAI	LY THOUSAN	IDS OF TON	N-MILES B	Y RAIL SEC	GMENT, AI	TERNATIVE	С		TOTAL				
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP S	AN JOSE	GILROY	SEGMENTS				
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5				
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5				
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5				
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0				
FR6000	343.0	364.0	81.0	0.0	54.0	3.0	4.0	124.0	0.0	0.0	973.0				
								104.0	201.0		0 145 5				
TOTAL	735.0	588.0	165.0	45.5	54.0	36.0	20.0	124.0	301.0	//.0	2,145.5				

TABLE M-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

		ANNUAL	ROG EMISS	IONS (POL	INDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	IVE C		TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,980	4,223	940	0	627	35	46	1,439	0	0	5.64
TOTALS	6,315	5,139	1,536	290	627	263	177	1,439	2,090	1,277	9.58
		ANNUAL	NOx EMISS	TONS (DO	INDC /VEADA	DV DATI	CECMENT	AI TEDNAT	TIVE C		
TRAIN TYPE	A-SAC	A-SJ	B	C/D	JIT	E			SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	93,603	99,333	22,104	0	14,736	819	1,092	33,839	0	0	132.76
TOTALS	198,680	158,805	44,917	12,268	14,736	9,751	5,486	33,839	81,706	22,864	291.53

TABLE M-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

TDATM		ANNUAL	. CO EMISS	IONS (POU	NDS/YEAR)	BY RAIL S	SEGMENT,	ALTERNAT	IVE C		TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Ε	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	13,156	13,962	3,107	0	2,071	115	153	4,756	0	0	18.66
TOTALS	24,901	19,781	5,730	1,356	2,071	1,163	696	4,756	9,529	3,835	36.91
		ANNUAL	SOx EMISS	IONS (POU	NDS/YEAR)	BY RAIL S	SEGMENT,	ALTERNAT	IVE C		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
A MT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	9,186	9,749	2,169	0	1,446	80	107	3,321	0	0	13.03

218 174 3,321 1,260 322 15.48

10,827 10,686 2,521 190 1,446

TOTALS

TABLE M-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

TRAIN		ANNUAL	PM10 EMISS	IONS (PO	JNDS/YEAR	BY RAIL	SEGMENT	, ALTERNA	TIVE C		
TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	40	0	0	20	27	0	285	510	0.44
FR6000	2,266	2,405	535	0	357	20	26	819	0	0	3.21
TOTALS	4,761	3,811	1,079	294	357	231	129	819	1,919	510	6.96

NOx = nitrogen oxides CO = carbon monoxide SOx = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

TABLE M-56. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE D

			DAILY TRA	AIN NUMBER	S BY RAIL	SEGMENT,	. ALTERN	ATIVE D		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	14	13	27		27	4	4	4		
TOTAL	30	21	55	26	27	48	20	4	14	2

		DAI	LY THOUSAN	IDS OF TON	I-MILES BY	RAIL SEG	GMENT, AL	TERNATIVE	D		TOTAL FOR ALL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY S	
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	343.0	364.0	81.0	0.0	54.0	3.0	4.0	124.0	0.0	0.0	973.0
TOTAL	735.0	588.0	165.0	45.5	54.0	36.0	20.0	124.0	301.0	77.0	2,145.5

TABLE M-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TRAIN		ANNUAL	ROG EMISS	IONS (POU	INDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	IVE D		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHR0P	SAN JOSE	GILROY	TONS/YR
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,980	4,223	940	0	627	35	46	1,439	0	0	5.64
TOTALS	6,315	5,139	1,536	290	627	263	177	1,439	2,090	1,277	9.58
		ANNUAL	NO× EMISS	SIONS (POU	JNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA ⁻	TIVE D		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YF
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	93,603	99,333	22,104	0	14,736	819	1,092	33,839	0	0	132.76
TOTALS	198 680	158 805	44,917	12.268	14.736	9,751	5,486	33.839	81,706	22,864	291.5

TABLE M-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TDATM		ANNUAL	. CO EMISS	IONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	IVE D		TOTAL
TRAIN	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	13,156	13,962	3,107	0	2,071	115	153	4,756	0	0	18.66
TOTALS	24,901	19,781	5,730	1,356	2,071	1,163	696	4,756	9,529	3,835	36.91

TDATN		ANNUAL	SOx EMISSI	ONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNATI	VE D		TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP S	AN JOSE	GILROY	TONS/YR
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	9,186	9,749	2,169	0	1,446	80	107	3,321	0	0	13.03
TOTALS	10,827	10,686	2,521	190	1,446	218	174	3,321	1,260	322	15.48

TABLE M-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TDATN		ANNUAL	PM10 EMIS	SIONS (PO	JNDS/YEAR)	BY RAIL	SEGMENT	, ALTERNA	ATIVE D		T0T41
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	4 6	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	40	0	0	20	27	0	285	510	0.44
FR6000	2,266	2,405	535	0	357	20	26	819	0	0	3.21
TOTALS	4,761	3,811	1,079	294	357	231	129	819	1,919	510	6.96

NOx = nitrogen oxidesCO = carbon monoxide

S0x = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

TABLE M-58. EMISSIONS FROM PORT OF OAKLAND RAIL TRAFFIC

	ANNUAL BAY AREA EMISSIONS, TONS/YEA							
ALTERNATIVE	ROG	N0×	CO	S0x	PM10			
NO ACTION	7.74	249.44	30.91	11.63	5.94			
ALTERNATIVE A	9.41	287.50	36.34	15.09	6.86			
ALTERNATIVE B	8.32	261.92	32.75	12.58	6.24			
ALTERNATIVE C	9.58	291.53	36.91	15.48	6.96			
ALTERNATIVE D	9.58	291.53	36.91	15.48	6.96			
	NET INCRE	ASE IN BAY	AREA EMI	ISSIONS,	TONS/YEAR			
	ROG	N0x	CO	S0x	PM10			
ALTERNATIVE A	1.66	38.06	5.44	3.46	0.92			
ALTERNATIVE B	0.57	12.48	1.84	0.95	0.30			
ALTERNATIVE C	1.83	42.09	6.00	3.86	1.01			
ALTERNATIVE D	1.83	42.09	6.00	3.86	1.01			

Notes:

ROG = reactive organic compounds NOx = nitrogen oxides CO = carbon monoxide SOx = sulfur oxides PM10 = inhalable particulate matter

TABLE M-59. PORT OF OAKLAND SHIP CALL PROFILE

Type of Vessel	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Percent of 1991 Vessel Calls	Percent of 2010 Vessel Calls		100% Power Fuel Use (gal/hr)
Container Ships	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	17.8% 37.0% 6.6% 1.9% 0.0%	6.3% 41.1% 12.6% 3.2% 0.0%	30.6 30.6 33.0 35.4	355 486 649 797 960
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	1.2% 7.0% 0.9% 0.0% 0.0%	1.2% 7.0% 0.9% 0.0% 0.0%	30.6 30.6 30.6	789 887 1,008 1,117 1,239
Tankers & Bulk Carriers	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	4.2% 5.9% 0.7% 0.5% 0.0%		25.8 45.0 49.8 45.0	2,064 4,194 6,857 9,253 11,916
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	0.5% 2.8% 0.9% 1.4% 0.0%	2.8% 0.9% 1.4%	25.8 37.8 49.8 45.0	789 887 1,008 1,117 1,239
General Cargo, Vehicle Carriers, RO-RO/Lash, Ocean Tugs	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	7.0% 1.9% 1.9% 0.0% 0.0%	1.9% 1.9% 0.0%	53.4 72.6 72.6	355 486 649 797 960

Notes: 1991 vessel call data from California Air Resources Board, 1991. Future vessel tonnage class estimates assume that diesel container ship sizes will increase.

TABLE M-60. EMISSION RATE DATA FOR MARINE VESSELS

	Port of	0ak1and					
Vaccal Time	Time			Rate, Lbs	s per 1,000	Gallons	of Fue
Vessel Type and Power Setting	(hours)	Fuel Use Factor	ROG	NO×	CO	S0x	PM10
Steam Boiler Propulsion							
Full Throttle	1.7	80%	1.72	63.6	7.27	318	56.5
Half Throttle	0.4	40%	0.682	55.8	3.45	318	20
One-Third/Slow	0.6	20%	0.682	55.8	3.45	318	20
Hotelling Bunker Fuel Distillate Oil		10% 10%	3.2	36.4 22.2	0 4	318 113.6	10 15
Marine Diesel Propulsion							
Full Throttle	1.7	80%	24	550	61	125.6	33
Half Throttle	0.4	40%	24	550	61	125.6	33
One-Third/Slow	0.6	20%	24	550	61	125.6	33
			Emiss	ion Rate,	Pounds per	Hour of	Use
Diesel Generators			ROG	NOx	CO	S0x	PM10
500 kW			0.49	15.43	3.53	1.08	0.36

Notes: Fuel sulfur content assumed to be 2% for bunker fuels, 0.8% for marine diesel and distillate fuels, and 0.2% for diesel generator fuels.

About 80% of steam ship hotelling uses distillate fuels, 20% uses bunker fuels. The typical generator size for marine diesel vessels is 500 kW.

Emission rates for diesel generators based on AP-42, Supplement F, section 3.4.

TABLE M-61. MARINE VESSEL EMISSIONS FOR THE NO ACTION ALTERNATIVE

	Steam	Vessel Tonnage	Annua1	No Action Alternative Annual Bay Area Emissions, Tons/Year					
Type of Vessel	or Diesel	(1.000 DWT)	Ship - Calls	ROG	NOx	co	S0x	PM10	
Container Ships	Diesel	0 - 25	67	1.43	37.27	6.00	6.01	1.65	
		25 - 50	433	11.50	292.05	44.42	50.53	13.76	
		50 - 75	133	4.46	111.72	16.38	20.16	5.46	
		75 - 100	33	1.32	32.74	4.69	6.05	1.63	
		100+	0	0.00	0.00	0.00	0.00	0.00	
	Steam	0 - 25	12	0.07	1.33	0.15	7.18	0.98	
		25 - 50	74	0.47	9.22	1.03	49.75	6.82	
		50 - 75	10	0.07	1.42	0.16	7.64	1.05	
		75 - 100	0	0.00	0.00	0.00	0.00	0.00	
		100+	0	0.00	0.00	0.00	0.00	0.00	
Tankers &	Diesel	0 - 25	44	3.85	90.68	11.09	19.32	5.12	
Bulk Carriers		25 - 50	62	10.91	256.07	30.93	55.07	14.57	
		50 - 75	7	1.97	45.98	5.42	10.08	2.66	
		75 - 100	5	1.88	43.47	5.03	9.65	2.54	
		100+	0	0.00	0.00	0.00	0.00	0.00	
	Steam	0 - 25	5	0.03	0.53	0.06	2.84	0.40	
		25 - 50	30	0.22	3.98	0.45	21.65	2.90	
		50 - 75	10	0.10	1.66	0.19	9.13	1.18	
		75 - 100	15	0.16	2.65	0.30	14.56	1.91	
		100+	0	0.00	0.00	0.00	0.00	0.00	
General Cargo,	Diesel	0 - 25	74	1.99	54.19	9.60	7.55	2.13	
Vehicle Carriers	,	25 - 50	20	0.73	19.97	3.53	2.79	0.79	
RO-RO/Lash,		50 - 75	20	0.86	22.91	3.86	3.46	0.96	
Ocean Tugs		75 - 100	0	0.00	0.00	0.00	0.00	0.00	
		100+	0	0.00	0.00	0.00	0.00	0.00	

	er Ships		762	19.3	485.8	72.8	147.3	31.4	
Bulk Ca General			178 114	19.1 3.6	445.0 97.1	53.5 17.0	142.3 13.8	31.3 3.9	
Total			1,054	42.0	1,027.8	143.3	303.4	66.5	

TABLE M-62. MARINE VESSEL EMISSIONS FOR ALTERNATIVE A

	Steam	Vessel Tonnage	Annua]	Alternative A Annual Bay Area Emissions, Tons/Year					
Time of Vessel	or	(1,000	Ship -		NOx		S0x	PM10	
Type of Vessel	Diesel	DWT)	Calls	ROG	NUX	CO	30X	FNITO	
Container Ships	Diesel	0 - 25	104	2.22	57.86	9.31	9.33	2.57	
		25 - 50	673	17.87	453.93	69.04	78.54	21.39	
		50 - 75	207	6.94	173.89	25.49	31.38	8.50	
		75 - 100	52	2.08	51.59	7.39	9.54	2.57	
		100+	0	0.00	0.00	0.00	0.00	0.00	
	Steam	0 - 25	19	0.11	2.11	0.24	11.36	1.56	
		25 - 50	115	0.73	14.32	1.61	77.31	10.59	
		50 - 75	15	0.11	2.12	0.24	11.46	1.57	
		75 - 100	0	0.00	0.00	0.00	0.00	0.00	
		100+	0	0.00	0.00	0.00	0.00	0.00	
Tankers &	Diesel	0 - 25	69	6.04	142.20	17.39	30.30	8.03	
Bulk Carriers		25 - 50	96	16.89	396.50	47.90	85.28	22.56	
		50 - 75	12	3.38	78.83	9.29	17.27	4.56	
		75 - 100	8	3.00	69.55	8.04	15.44	4.07	
		100+	0	0.00	0.00	0.00	0.00	0.00	
	Steam	0 - 25	8	0.04	0.85	0.09	4.55	0.63	
		25 - 50	46	0.34	6.10	0.69	33.19	4.44	
		50 - 75	15	0.15	2.49	0.28	13.70	1.77	
		75 - 100	23	0.24	4.07	0.46	22.33	2.93	
		100+	0	0.00	0.00	0.00	0.00	0.00	
General Cargo,	Diesel	0 - 25	115	3.10	84.21	14.92	11.74	3.31	
Vehicle Carriers,		25 - 50	31	1.14	30.96	5.48	4.32	1.22	
RO-RO/Lash,		50 - 75	31	1.34	35.51	5.98	5.36	1.49	
Ocean Tugs		75 - 100	0	0.00	0.00	0.00	0.00	0.00	
		100+	0	0.00	0.00	0.00	0.00	0.00	
Containe	r Ships		1,185	30.1	755.8	113.3	228.9	48.8	
Bulk Car	•		277	30.1	700.6	84.1	222.1	49.0	
General			177	5.6	150.7	26.4	21.4	6.0	
Total			1,639	65.7	1,607.1	223.8	472.4	103.8	

TABLE M-63. MARINE VESSEL EMISSIONS FOR ALTERNATIVE B

	Steam	Vessel Tonnage	Annual Ship -	Alternative B Annual Bay Area Emissions, Tons/Year					
Type of Vessel	or Diesel	(1,000 DWT)	Calls	ROG	NO×	CO	S0x	PM10	
Container Ships	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	84 545 168 42 0	1.80 14.47 5.64 1.68 0.00	46.73 367.60 141.13 41.67 0.00	7.52 55.91 20.69 5.97 0.00	7.54 63.60 25.47 7.70 0.00	2.07 17.32 6.89 2.08 0.00	
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	16 93 12 0 0	0.09 0.59 0.09 0.00 0.00	1.77 11.58 1.70 0.00 0.00	0.20 1.30 0.19 0.00 0.00	9.57 62.52 9.17 0.00 0.00	1.31 8.57 1.26 0.00 0.00	
Tankers & Bulk Carriers	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	56 78 9 6	4.90 13.73 2.54 2.25 0.00	115.41 322.16 59.12 52.16 0.00	14.11 38.92 6.96 6.03 0.00	24.59 69.29 12.95 11.58 0.00	6.51 18.33 3.42 3.05 0.00	
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	6 37 12 19 0	0.03 0.27 0.12 0.20 0.00	0.64 4.90 1.99 3.36 0.00	0.07 0.55 0.23 0.38 0.00	3.41 26.70 10.96 18.44 0.00	0.48 3.57 1.42 2.42 0.00	
General Cargo, Vehicle Carriers RO-RO/Lash, Ocean Tugs	Diesel ,	0 - 25 25 - 50 50 - 75 75 - 100 100+	93 25 25 0 0	2.50 0.92 1.08 0.00 0.00	68.10 24.96 28.64 0.00 0.00	12.06 4.42 4.82 0.00 0.00	9.49 3.49 4.33 0.00 0.00	2.68 0.98 1.20 0.00 0.00	
Contain Bulk Ca General			960 223 143	24.4 24.0 4.5	612.2 559.7 121.7	91.8 67.3 21.3	185.6 177.9 17.3	39.5 39.2 4.9	
Total			1,326	52.9	1,293.6	180.3	380.8	83.6	

TABLE M-64. MARINE VESSEL EMISSIONS FOR ALTERNATIVE C

	Steam	Vessel Tonnage	Annual	Annu	Alt al Bay Are	ernative a Emissio		Year
Type of Vessel	or Diesel	(1,000 DWT)	Ship - Calls	ROG	NOx	CO	S0x	PM10
Container Ships	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	108 700 215 54 0	2.31 18.58 7.21 2.16 0.00	60.08 472.14 180.61 53.57 0.00	9.66 71.81 26.47 7.68 0.00	9.69 81.69 32.59 9.90 0.00	2.67 22.25 8.82 2.67 0.00
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	20 120 16 0	0.11 0.76 0.12 0.00 0.00	2.22 14.95 2.26 0.00 0.00	0.25 1.68 0.25 0.00 0.00	11.96 80.67 12.22 0.00 0.00	1.64 11.05 1.68 0.00 0.00
Tankers & Bulk Carriers	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	72 100 12 8 0	6.30 17.60 3.38 3.00 0.00	148.38 413.02 78.83 69.55 0.00	18.14 49.89 9.29 8.04 0.00	31.62 88.83 17.27 15.44 0.00	8.38 23.50 4.56 4.07 0.00
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	8 48 16 24 0	0.04 0.35 0.16 0.25 0.00	0.85 6.36 2.65 4.25 0.00	0.09 0.72 0.30 0.48 0.00	4.55 34.64 14.61 23.30 0.00	0.63 4.64 1.89 3.05 0.00
General Cargo, Vehicle Carriers RO-RO/Lash, Ocean Tugs	Diesel ,	0 - 25 25 - 50 50 - 75 75 - 100 100+	120 32 32 0 0	3.23 1.18 1.38 0.00 0.00	87.87 31.95 36.66 0.00 0.00	15.56 5.65 6.18 0.00 0.00	12.25 4.46 5.54 0.00 0.00	3.45 1.26 1.54 0.00 0.00
Contain Bulk Ca General			1,233 288 184	31.3 31.1 5.8	785.8 723.9 156.5	117.8 87.0 27.4	238.7 230.3 22.3	50.8 50.7 6.3
Total			1,705	68.1	1,666.2	232.2	491.2	107.8

TABLE M-65. MARINE VESSEL EMISSIONS FOR ALTERNATIVE D

	Steam	Vessel Tonnage	Annual	Annu	Alt al Bay Are	ernative a Emissio		Year
Type of Vessel	or Diesel	(1,000 DWT)	Ship - Calls	ROG	NOx	CO	S0x	PM10
Container Ships	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	106 690 212 53 0	2.27 18.32 7.11 2.12 0.00	58.97 465.40 178.09 52.58 0.00	9.49 70.79 26.10 7.53 0.00	9.51 80.53 32.14 9.72 0.00	2.62 21.93 8.70 2.62 0.00
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	20 118 16 0 0	0.11 0.75 0.12 0.00 0.00	2.22 14.70 2.26 0.00 0.00	0.25 1.65 0.25 0.00 0.00	11.96 79.32 12.22 0.00 0.00	1.64 10.87 1.68 0.00 0.00
Tankers & Bulk Carriers	Dieseï	0 - 25 25 - 50 50 - 75 75 - 100 100+	71 98 12 8 0	6.21 17.25 3.38 3.00 0.00	146.32 404.76 78.83 69.55 0.00	17.89 48.90 9.29 8.04 0.00	31.18 87.05 17.27 15.44 0.00	8.26 23.03 4.56 4.07 0.00
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	8 47 16 24 0	0.04 0.35 0.16 0.25 0.00	0.85 6.23 2.65 4.25 0.00	0.09 0.70 0.30 0.48 0.00	4.55 33.91 14.61 23.30 0.00	0.63 4.54 1.89 3.05 0.00
General Cargo, Vehicle Carriers RO-RO/Lash, Ocean Tugs	Diesel ,	0 - 25 25 - 50 50 - 75 75 - 100 100+	118 31 31 0 0	3.18 1.14 1.34 0.00 0.00	86.41 30.96 35.51 0.00 0.00	15.30 5.48 5.98 0.00 0.00	12.05 4.32 5.36 0.00 0.00	3.40 1.22 1.49 0.00 0.00
Contain Bulk Ca General			1,215 284 180	30.8 30.6 5.7	774.2 713.4 152.9	116.1 85.7 26.8	235.4 227.3 21.7	50.1 50.0 6.1
Total			1,679	67.1	1,640.5	228.5	484.5	106.2

TABLE M-66. SUMMARY OF MARINE VESSEL EMISSION ESTIMATES

	Annual	Annu	al Bay Are	a Emissic	ons, Tons	s/Year
Alternative	Ship Calls	ROG	NOx	CO	S0x	PM10
No Action	1,054	42.0	1,027.8	143.3	303.4	66.5
Alternative A	1,639	65.7	1,607.1	223.8	472.4	103.8
Alternative B	1,326	52.9	1,293.6	180.3	380.8	83.6
Alternative C	1,705	68.1	1,666.2	232.2	491.2	107.8
Alternative D	1,679	67.1	1,640.5	228.5	484.5	106.2
		Net Incre	ase in Bay	'Area Emi	ssions,	Tons/Year
		ROG	NOx	CO	S0x	PM10
Alternative A		23.7	579.2	80.5	169.0	37.3
Alternative B		10.9	265.8	37.1	77.4	17.1
Alternative C		26.1	638.4	88.9	187.8	41.2
Alternative D		25.1	612.7	85.2	181.0	39.7